"THE AEROPLANE," FEBRUARY 13, 1942.

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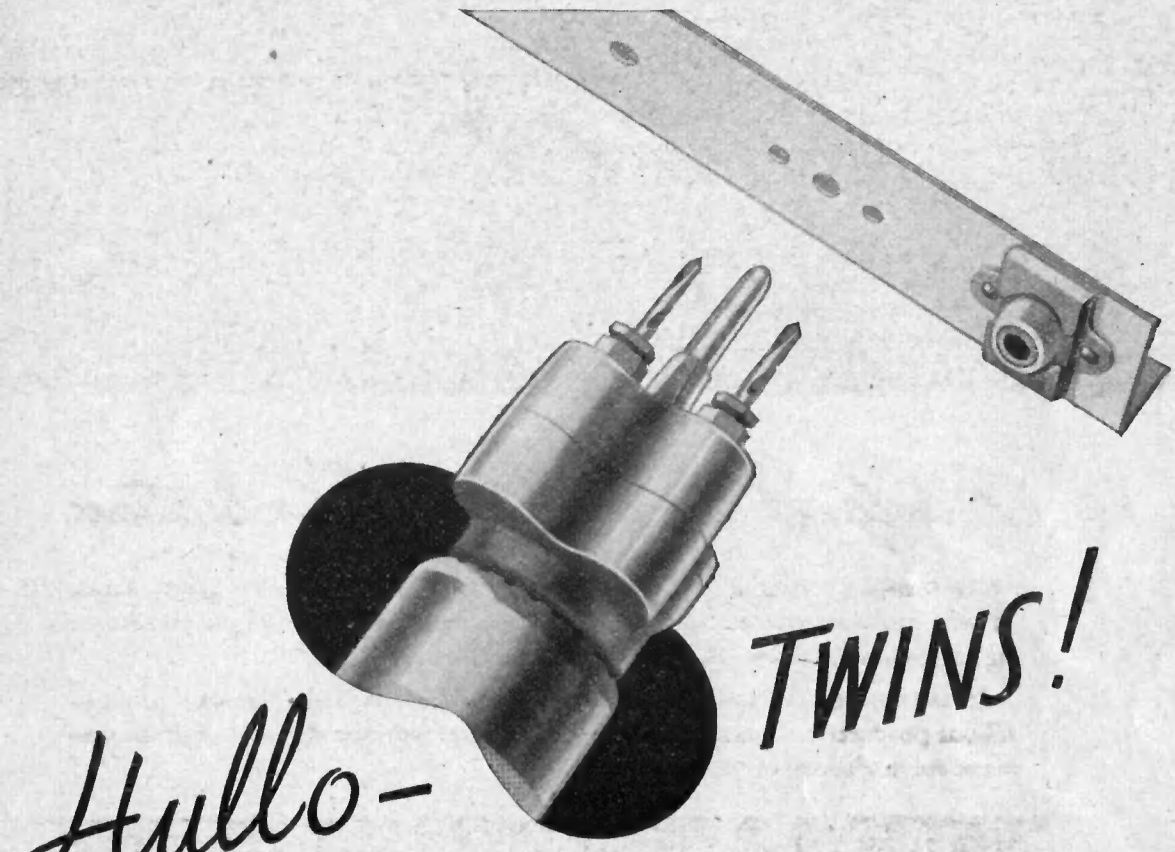

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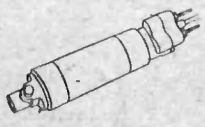

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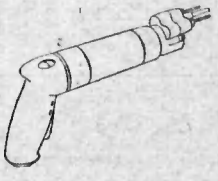

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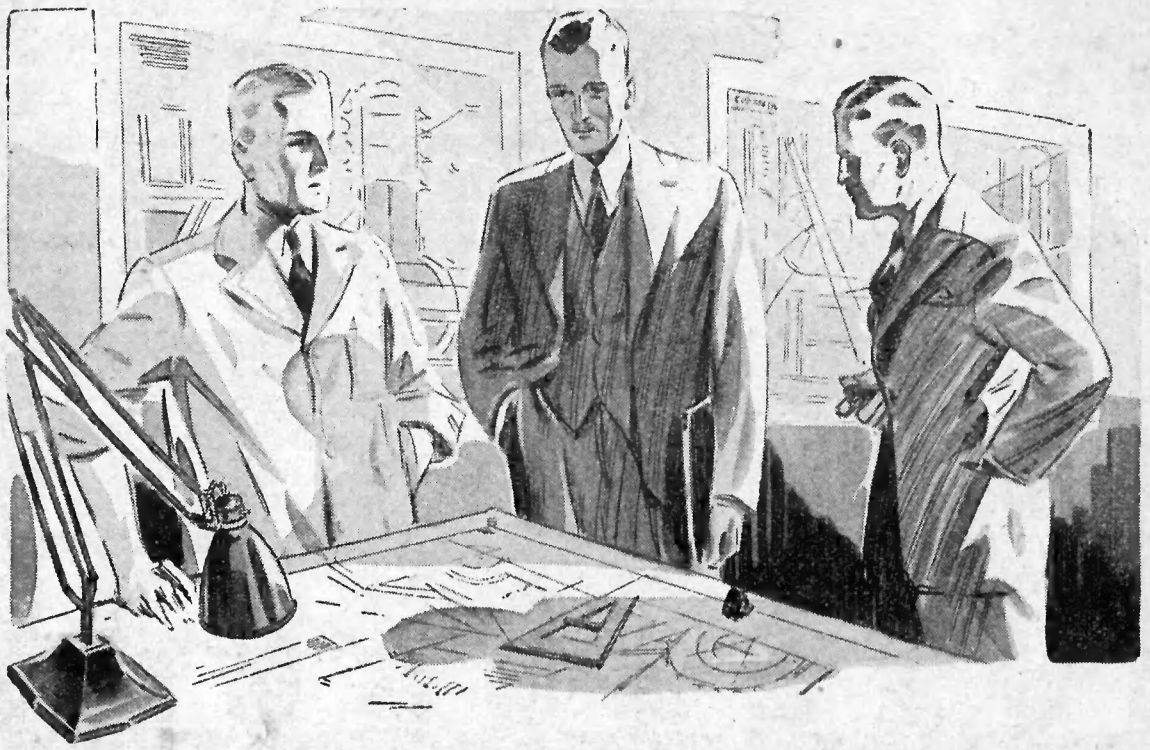

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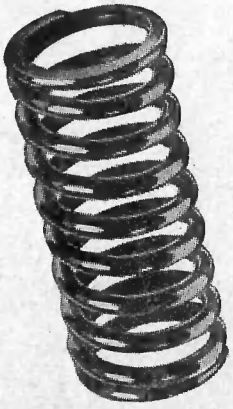

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MATTERS OF MOMENT

The Unity of Resistance

IF THE JAPANESE onslaught has brought new troubles on the British, it has also served an ultimate purpose which matters more than the loss of British territory and property. It has brought to the hard test of intimate danger all the idealistic and often vague aspirations towards freedom and independence of millions of people. Europe's ordeal by aggression has come and been endured. Asia's trial is upon her. Australia and America feel the threat. India, rousing slowly, is moved. Africa finds herself a buffer between the two worlds, coming even more slowly to the consciousness of peril. Across most of the World, the spirit of man is brought sharply to face a threat he had never supposed would bar his progress. In his gradual emancipation and civilisation, man had not counted on the possibility of a reviving tyranny.

Now he finds himself obliged to support those old masters, from whom he was extracting a limited freedom, so that the measure of liberty he has won should not be snatched from him. The ponderous protection promised by a great State has failed for the moment and with it the right of the great State to lordship, but the removal of the old restraining hand has not given the long-dreamed freedom. It will have set it back by hundreds of years unless the new conquest is overcome and the latest aggresssor is beaten down and held in check. Man in the East is learning painfully the lesson which man in the West has had to re-learn. He sees that freedom is less a political condition than a state of mind. He should discover, as we may hope that Europe has discovered, that national exclusiveness and particularism is no safeguard against the wickedness of greedy neighbours. In short, he should see that exploitation can be prevented only by honest and healthy co-operation.

Preservation or Exploitation

A revolution in outlook may be involved in that. One of the subtle aspects of German and Japanese schemes is their pretence of offering "collaboration" and "co-prosperity." The Chinese have put their own interpretation on Japanese benevolence. The Norwegians, Danes, Dutch, Belgians, French, Bulgars, Rumanians and Greeks have, by now, taken the measure of partnership with the Germans. Mankind has no difficulty in identifying the two kinds of self-interest which move the principal antagonists in the struggle. The one is acquisitive and the other conservative and protective. Yet every hope of freedom lies with that huge body of humans who would preserve the old attitude towards life and persist in the system of evolutionary progress which has given civilised life a steady direction for more than a century. Upon the whole World is now dawning the conviction that the choice is between that kind of progress and a fresh start at the exploiting stage.

The British and, with less conviction, the French began this War to defend their accustomed ways of life and to resist the restoration of the State rather than the people to the pinnacle of civilised existence. The British and the Americans now have to widen their conception of the War's significance. They find themselves fighting not simply for the defence of their own familiar decencies; not only for the right to settle freely in other lands; not for sources of raw materials and the profits of ownership or even for strategic positions from which to control the bandits and dictators, but for the hope of freedom which, by their customs and habits, they have encouraged in millions of less privileged peoples. The two things cannot be separated now. The champions of those Nations which had won their freedom are become involuntarily the champions also of those who were seeking freedom from their tutelary restraints. The trusts, which the British and Americans accepted with their profits, are as much menaced as the possessions of the Great Powers. The idealistic aspect of the fight presents itself in the Far East more urgently than it did in the West.

Leadership in the East

Australia, for economic reasons, cannot face the prospect of domination by Japan. India, Burma, Ceylon, Egypt, Africa, the Philippines and other Pacific Islands for political and spiritual reasons cannot contemplate a new serfdom bearing allegiance to either Japan or Germany. All these peoples will have to range themselves with the Allies. The Japanese are as little loved in the East as the Germans in the West. China is more likely than Japan to claim the right to leadership in Eastern Asia. And closer to China than any of the Allies is Russia, which is steadily establishing the right to a foremost place in the preservation of the European peace. The link between the East and the West may therefore be amplified in future by a line of intercourse, largely dependent on air services, through Russia and whether the East flavours its economics with Russian ideas or with the less radical modern ideas of social well-being of Great Britain and America may well depend on the skill of the Western lands in admitting the peoples of the East to real co-operation in thrusting back the new threat of slavery.

Prestige can be won back for British and Americans by re-asserting control of the seas and by evicting the Japanese from the islands they have seized. In the long run, the large sea power of Japan will be brought to reckoning by naval and air forces superior in quality and possibly in numbers. Before that happens, military power will probably have taken a hand in embarrassing the Eastern

BESIEGED.—The civil airport at Singapore, known locally as Kallang Airport. The airport was officially opened in June, 1937. Work was begun on it in 1931. It was built on reclaimed swamp ground at a cost of £1,050,000. The diameter of the landing area is 1,000 yds.

enemy. China and almost certainly Russia are likely to cut in on the long Japanese flank and to make the marauders still more dependent on sea communications. The ability of either Nation to make its contribution in the East will be determined by the success of Allied sea power in bringing arms to them across the oceans and in passing them along the tenuous land routes through Iran and Burma. What happens in the Atlantic, in the Indian Ocean and, in a different sense, in the Mediterranean, is thus seen to be capable of influencing deeply the fortunes of those best placed to fight the land battle of freedom in the East.

All this is clearly understood by the chief enemy. It informs his renewed thrust across Libya towards Egypt. It inspires his desperate fighting in Southern Russia and the Crimea. It is behind his drafting of submarines into the Mediterranean. It is concerned with his intrigues among the Arabs and his wooing of Turkey. It marks his new suborning of the Vichy French. He may need the oil of the Caucasus, but he is straining his resources to hold the Crimea and to make a successful campaign in North Africa in the hope of moving forward towards India to cut the line of supply into Russia while his ally tries to cut the corresponding line into China. If he could do it, he would still the grumbling tongues in a Reich which is depressed by the Winter's failures in Russia. He would also get the oil he will soon need badly. But above all he would have isolated Russia and have cut off the British in the East from the British in the West. For strategical purposes, that would be valuable. For the moral effect on those in the East who look to the British for salvation, it would be beyond value.

The fate of the British and now of the Americans is to hold the shield and buckler for humanity. The victories will come. Russia has begun to win them. She may win more, in places beyond the present reach of the other Allies. China may win others on ground which she has made peculiarly her own by the heroism of a single generation. The British and the Americans will win theirs, especially by sea and in the air. The effort is essentially a joint one and is directed less to the fleshpots and the fatted calves than any great movement of the past. Peoples rather than Powers are bent this time on victory. Most of their substance will be devoted to it that their spirits may remain in their keeping. The decisive battles will be won by the peoples—by which of the peoples in association matters little. They have brought themselves into association for a common protective purpose, denying all desire for material gain. Upon them must rest the subsequent purpose of turning their preserved freedom to mutual good.

Handicaps of the R.A.F.

IN ONE of their attacks on Sourabaya, the Japanese were reported to have had fighter escorts for their bombers. The big bombers certainly did not operate from an aircraft carrier; the fighter escorts almost as certainly did. That probably means that the bombers belonged to the Army Air Arm and that the fighters belonged to the Naval Air Arm. Here, then, was a combined air operation which must have delighted the advocates of splitting up the Royal Air Force between the Army and the Navy. In fact, it represented the flexible use of Air Power which the R.A.F. has always recommended and sought to apply. It was one of those engagements in which aircraft intended originally for land warfare were diverted to a naval duty. The R.A.F. could produce dozens of examples like it.

The principle of air support for either of the more senior Services has been clearly discussed by Marshal of the Royal Air Force Lord Trenchard. His views are reproduced on other pages in this issue. They need no special emphasis from us. We believe that whatever desires the Navy and the Army may have to take part of the R.A.F. under their own particular wings is explained less by any feeling of discontent at the way in which air support is given than by the egotistical conviction so widely held that, if a job is to be well done, it must be done by oneself. The R.A.F.

holds that view just as firmly as the Navy and the Army. It is a form of self-assurance which often produces splendid results. It marches well with that pride in a Service which breeds the finest devotion. But it tends also to create a dislike in one Service of having to ask another Service to help it do its work.

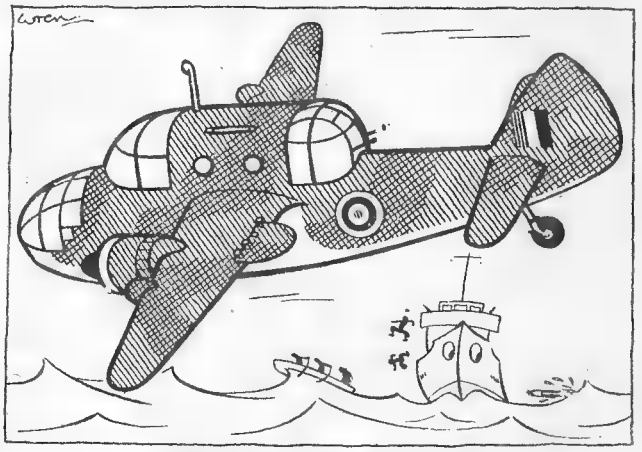
If the R.A.F. were 200 or 300 years old, the other Services would have grown out of their distrust of an arm they do not control. Their loyal anxieties would have been allayed by generations of combined operations. They would have come to accept the expert advice of the airman as sound because it was backed by a long tradition of soundness. They would have come to ask automatically for the amount and nature of air support they needed because they would remember many precedents in which their requests had been amply met. The youth of the R.A.F. is its biggest burden. It not only condemns the Force to the faint suspicion of inexperience, but it encourages those who suspect it to argue that there is danger in the amateur handling of situations in which they and their forebears have become hoary professionals.

The Foresight of Youth

In this War so much is new that the R.A.F. is entitled to set its 24 years of experience alongside the centuries of experience which the other Services can claim. In its power of improvisation it has not been behind the other Services. In matters which the Navy would seem to be claiming as its own the R.A.F. looked much farther ahead than did the Navy in things which were in fact its own. The Coastal Command, with its mixture of seaplanes and landplanes for sea patrol, was a masterpiece of foresight in the matter of equipment and has since been a model of modest co-operation for which the Navy should be, and probably in its heart is, thankful. The Bomber Command has sacrificed some of its individual interests to strengthen and intensify the work of the Coastal Command.

What the Bomber Command has done and is doing for the Army will be fully understood only when German plans for the invasion of Great Britain in 1940 and German difficulties in North Africa can be examined in detail. On the fighter side, the contribution to the Army and the Navy from the time of Dunkirk onwards has been large and unceasing—larger, perhaps, than it could have been if half of the Command had belonged to the Navy and half to the Army. In devising new methods to meet new situations, the Fighter Command has proved more adaptable than any inexperienced and youthful Service should have the audacity to be. All the Services have had to modify their ideas and adjust their methods. Neither Army nor Navy has the right to claim that it could better do the work of the R.A.F. until it has shown its ability to cope with those new tasks of its own in which the R.A.F. cannot share. We do not believe the Cabinet is disposed to break up a great Service for the gratification of soldiers and sailors, no matter how good they may be as soldiers and sailors. Nor should those who put one of the other Services first run the risk of making the R.A.F. less keen than it is to put its shoulder to the wheel.

ODDENTIFICATION—XLVI



Little Beau-Fort likes dangerous sport
And knows just where to find it—
Trust it to roam and it'll come home.
And leave a wreck behind it.

DESERT BOSTON.—The R.A.A.F. crew of a Boston III (two Wright Double-Row Cyclone motors) leaving their aeroplane after a patrol over the Libyan battlefront.

The Pest Himself

JUST BEFORE he took off in a Do 23 to spray insecticide over one of Göring's forests, a German pilot was photographed. On December 19, 1941, the picture was reproduced in THE AEROPLANE.

Shortly afterwards the same pilot, a pest himself now, baled out of a blazing Do 217 over England—in nice time to see his picture in the paper. The job he had set out to do was still for Göring—to spray a few bombs on Britain. But he never reached his target, for he lost his way, dropped his bombs at random and headed for home. He never got there either. In the early hours he was attacked by a Bristol Beaufighter and his aeroplane set ablaze while he had to bale out.

Little bits of paper
Little bits of card
Make the Germans caper
When the going's hard.
Shredded into mincemeat,
Pulped, re-made for guns,
They can put in Queer Street
The carpet-biter's sons.

The Boulton Paul Defiant

BOULTON PAUL AIRCRAFT LTD.—formerly Boulton and Paul Ltd., of Norwich—is one of the older firms in the Aircraft Industry. The original organisation, a big company of building constructors, began the manufacture of aeroplanes in 1916. At first only aeroplanes designed by other firms were built, but after Mr. J. D. North (already well known) joined the Company as Chief Designer, an original design was produced. This was the Bobolink, a single-seat fighter which appeared in 1917.

Later the Bourges two-motor fighter-bomber was produced. This aeroplane had a remarkable performance for its day, and was the first of a long series of successful medium bombers of basically similar design which culminated in the Overstrand of 1934.

Many visitors to the old R.A.F. Displays will have memories of the agility of the B.P. medium bombers. Their fine flying qualities are reproduced in the latest of the firm's designs to go into service—the Defiant two-seat turret fighter.

Although Boulton and Paul Ltd. (which became Boulton Paul without the "and" in 1934 when the Aircraft Branch broke away from the old Company) was best known for its medium bombers, it has also produced a number of fighters since the Bobolink. Of interest were the Partridge, a small biplane with rather severe lines, and the Bittern, one of the first single-seat two-motor fighters.

None of these fighter designs got beyond the prototype stage, so that it was something of a landmark in the history of the Company when the Air Ministry ordered the Defiant in quantity in 1938.

Production was soon under way and the Defiant started coming into service early in 1940. It was first reported in action during the fighting over Dunkirk.

One of the first days on which Defiants were active was May 29, 1940. On that memorable day one squadron of them accounted for 38 enemy aircraft without loss to themselves. That is a record score for one squadron and is likely to remain so for a long time.

The chief explanation of this remarkable success was that the German fighter pilots who saw the Defiants mistook them for Hurricanes and accordingly attacked from the rear—with disastrous consequences to themselves. They were roughly handled by the concentrated fire from the power-operated four-gun turrets.

During the whole of the fighting over Dunkirk, Defiants accounted for a total of at least 60 German aeroplanes. Later, during the daylight fighting in the Battle of Britain, less was heard of the Defiant squadrons. The reason for this was that the long series of violent engagements which comprised the "Battle" called chiefly for fast climbing interceptors to deal with the attacking German formations.

The Defiant, with its massive turret and with a motor of only the same power as that of the Hurricanes and Spitfires, had a lower rate of climb than the single-seaters, and was, therefore, obviously less suitable as an interceptor. Because of this, the Defiant was relatively quiescent in ensuing months. Nevertheless, this fighter was destined to achieve fame again during the long nights of the following Winter.

When the Luftwaffe gave up large-scale day bombing in the Autumn of 1940 and turned instead to night operations, the R.A.F. was presented with a formidable problem: how to intercept the raiders shielded so effectively at that time by the darkness. The single-seaters which had battered the German formations in daylight were far less suitable for night work. Here was the Defiant's chance, and we know now how well it responded. Since then the Defiant squadrons have been employed almost exclusively for night fighting and have destroyed about 50 raiders on this work, eight of them on the night of May 8-9, 1940. They destroyed five out of the 33 shot down on the night of May 10-11, 1941.

An account of the construction and production of the Defiant will be found on page 188 of this issue.

The Short Stirling

WE STATED in our recent article on the Stirling that the undercarriage failure which occurred to the prototype "was the outcome of a small error in the stress calculations." After a crash it is often difficult to draw unassailable conclusions on the cause, but we are informed by Short Brothers that the undercarriage failure definitely did not result from an error in the stress calculations, which had been verified by the Royal Aircraft Establishment.

Whatever the cause the weakness has long since been eradicated and the Stirling's undercarriage has been entirely satisfactory in service.

["Aeroplane" photograph

IN PRODUCTION.—An assembly line of Boulton Paul Defiant two-seat turret fighters.

NEWS OF THE WEEK

PRESIDENT ROOSEVELT announced on Feb. 6 that the Combined Command at Washington for the Pacific area had been formally constituted. It consists of:—The American Chief of Naval Operations, the Chief of the Army Staff, the Commander-in-Chief of the Fleet, and the Chief of the Army Air Forces. The British Chiefs of Staff are represented by:—Field-Marshal Sir John Dill, Admiral Sir Charles Little, Lieut.-General Sir Colville Wemyss, and Air Marshal A. T. Harris.

Lord Beaverbrook was appointed Minister of War Production on Feb. 4 and Sir Andrew Duncan was appointed to succeed him as Minister of Supply.

The U.S. Naval Appropriations Bill in the U.S. Congress, which was passed on Feb. 6, gives the U.S. Navy £6,600,000,000, of which £2,000,000,000 is for aeroplanes. The U.S. Navy Air Force has leased facilities from four American universities for training 30,000 pilots a year. The pilots are to be given a special three months' course of "severe" physical training before starting their flying training.

A Court Martial was opened at Portsmouth on Feb. 2 to inquire into the loss of H.M.S. "Ark Royal."

Australia is to concentrate on the production of operational aeroplanes. A new type of Australian-designed bomber, for which an expenditure of £A5,000,000 has been authorised, is to be built. Nearly all the materials used will be Australian. Increased production of the Bristol Beaufort has also been ordered and plans have been made for procuring fighters for Australia, and, eventually, for building fighters. An advanced training course for fighter pilots is to be given. Production of the Wirraway advanced trainer is to be discontinued when the present order is completed.

Brig.-General Carl Spaatz has been appointed Chief of the U.S. Army air combat forces, and promoted to the rank of Major-General.

The U.S. Army Air Forces are to be expanded to a total of 1,000,000 officers and men this year and double that number later. Flying training is to be given at West Point, starting next month, as part of the expansion programme, and a number of cadets at West Point will be graduated as pilots instead of having to spend a year on flying training after graduating.

Thirteen people were killed when an Empire flying-boat of Qantas Empire Airways was shot down by Japanese fighters near Kupang on Jan. 30.

REINFORCEMENTS FOR SINGAPORE.—The Netherlands East Indies answered the call for reinforcements for Singapore by sending aeroplanes of the Netherlands Air Force, which has already proved its striking power in air combat and against enemy transport. Here a Glenn Martin 166 takes off ■ a raid on Japanese positions.

Air Transport is the subject of Article No. 11 of the Agreement and Military Convention between the United Kingdom and Ethiopia, which was published on Feb. 3. The Emperor of Abyssinia is to give free passage to, in, and over, Ethiopia to British civil aeroplanes. A British air transport organisation, or organisations, to be designated by the United Kingdom Government, is to be allowed to operate regular services to Ethiopia for passengers, mails and freight. Aerodromes, ground equipment and facilities which are available in Ethiopia may be used by such organisations and other necessary facilities may be provided. Foreign aircraft will not be permitted to operate there.

The War

JAPANESE FORCES landed on the West side of Singapore Island on Feb. 8.

Plans for pooling British and American operational aeroplanes are believed to have been almost completed. The arrangements provide for the R.A.F., the Fleet Air Arm, the U.S. Army Air Forces and the U.S. Navy Air Service to use either British or American equipment, whichever may be available, in any theatre of the War.

Derna was evacuated by the Imperial forces on Feb. 3.

Japanese bombers, escorted by fighters, attacked the Netherlands naval base at Sourabaya and neighbouring aerodromes on Feb. 3 and 5.

A small formation of P-40 fighters of the U.S. Army Air Forces was officially announced on Feb. 5 to have been in action over Java and to have shot down one Japanese bomber and a fighter for the loss of one P-40.

Malta had 263 air raids during the month of January.

At least 10 Japanese aeroplanes were definitely destroyed and a further 10 probably destroyed by fighters of the R.A.F. and American Volunteer Group on Feb. 6, when about 30 Japanese aeroplanes attempted to raid the Rangoon area.

Service News

THE R.A.F. FERRY COMMAND Headquarters at Montreal has announced that three Lockheed Hudsons have been flown to England by crews trained under the Empire Air Training Scheme in Canada and that selected crews will be sent overseas in this way in future. The first three Empire trained pilots to ferry American aeroplanes across to Great Britain were an Australian, a Canadian and an Englishman.

The death has been announced of Major-General M. M. Patrick, U.S. Army. He was appointed Chief of the Air Service of the U.S. Army in 1918 towards the end of the last War and was the first Chief of the U.S. Army Air Service in 1924.

A number of R.A.F. sergeants returned recently from the United States where they had visited American aircraft factories to study production and maintenance methods for airframes and aero-motors.

The Air Training Corps had its first anniversary on Feb. 1. Sir Archibald Sinclair, Secretary of State for Air, sent a message of congratulation to the A.T.C. through Air Commodore J. A. Chamier. In it he said that the A.T.C. had taken its place in the support line behind the R.A.F.

Two R.A.F. aeroplanes dropped food for 200 passengers marooned in a snow-bound train on the L.M.S. line between Helmsdale, Sutherland, and Wick, Caithness, during a recent blizzard.

The Royal Air Force has set a fine example of intimate collaboration with scientists, according to Sir Henry Tizard in a speech he made at the first annual luncheon of the Parliamentary and Scientific Committee on Feb. 3. Sir Henry stated that the technical needs of the R.A.F., the staff plans, and even the operations of the R.A.F. had been submitted freely to the scrutiny and criticism of the scientists. The R.A.F. had received so good a dividend from this practice that it was being followed by other Services.

SNOWED UP.—During the recent severe frost, an Armstrong Whitworth Whitley of Coastal Command dropped food and woollen clothing to passengers in a train snowbound between Helmsdale and Wick in North-West Scotland.

The 127th Week of

THE WAR IN THE AIR

HARD HITTER.—The latest Handley-Page Halifax II in which the "Hudson-type" Boulton Paul two-gun top turret can be distinguished just behind the wing. The Halifax already has a goodly number of enemy fighters to its credit.

ALTHOUGH the Royal Air Force now has equality in numbers with the Luftwaffe, although man for man and machine for machine it is superior, although it has great and powerful allies in the Air Arms of the U.S.A. and Russia, the situation to-day is probably more serious than at any time since Dunkirk.

In Libya we are forced to retreat, and have presented the enemy with dumps of supplies almost for the taking; in the Far East we have not yet got the measure of the Japanese; on both fronts we must expect further reverses; and the approach of better weather in the West may bring with it invasion.

Such thoughts may seem depressing, yet we do better to face the prospects of hard blows and plan ahead to return them. The enemy, too, is far from satisfied with the tide of War. After two-and-a-half years things are hard for all Nations. Fortunately, our own War effort is now getting into its stride, whereas that of the enemy is fully extended.

Now that the Spring is only a few weeks away we must sort out our strategy so that we are prepared for any eventuality. The enemy is desperate and is certain to make tremendous efforts to strike a crippling blow at the Allied war machine. Any or all of five possibilities are likely.

(i) An intense drive by the Germans on the Southern end of the Russian front combined with a large-scale assault on Egypt and a push through Turkey.

(ii) An attack by Japan on Russia through Manchukuo.

(iii) An invasion of Great Britain.

(iv) A German push through Spain towards West Africa.

(v) A Japanese landing in India.

The important advantage possessed by the Axis at present is that it holds the inner lines and thus the initiative. Germany, Italy and Japan can each strike outwards from concentrated lines of supply. Eventually, when we gain absolute superiority in equipment this concentration will be a disadvantage for the net can be tightened round the enemy's position. But there is much hard fighting, serious planning and energetic production to be done yet.

In fact, production is the one key to success. More aeroplanes, more ships and more tanks and better aeroplanes and ships and tanks are needed. Their importance to the War, is probably in that order—the tanks, though vital, must come third in priority because our means of securing decisive superiority over the enemy are immeasurably greater in the air and on the sea than on land. Nevertheless, the lesson that quality must always beat quantity which we learned in the Battle of Britain and in Libya, must always be a guiding rule. And one maxim in relation to quality, which we appear to have applied less determinedly than we might, is that striking power—weapon power—is the supreme factor in battle.

We must out-plan, out-produce and out-fight the enemy.

Landing at Singapore

FOR SEVEN DAYS Singapore endured long spells of bombardment from guns and aeroplanes. On the eighth the Japanese made a landing on the West coast of the Island. Earlier, an island in the Johore Strait had been occupied; several sampans with Japanese soldiers on board had been sunk as they tried to cross the Strait, and two soldiers who swam across had been captured by Indian troops when they waded ashore. Observation balloons and aeroplanes were used by the Japanese for their artillery spotting.

Many of the Japanese air raids were again aimed at the Island's aerodromes, and in an interview Lieutenant-General A. E. Percival, commander of the Forces defending the Island, referred to the withdrawal of certain units of the Royal Air Force—indicating that the bombing had had some measure of success. Most of the daylight raiders were intercepted by fighters, which suggested that only the bombers had been withdrawn.

Japanese plans for the conquest of the Dutch East Indies appeared to have been set back by the losses suffered by the invasion convoy in the Macassar Strait. At no point did the enemy attempt to land troops where he had not already landed others but, instead, made heavy raids on Sourabaya and caused damage to the naval and air base. The Dutch admitted that many fighters on the ground were destroyed, that some training seaplanes and old flying-boats in the harbour had been hit, but denied the Japanese claim to have destroyed the greater part of the Dutch East Indies fleet. This, said a communiqué, was at sea intact and ready for action. There were also raids on Malang, Madioen, Magelang and Rembang, and on Kupang in Dutch Timor.

Rangoon had many raids, some by day others by night. The primary target was an aerodrome to the North of the town, but little damage was done to it, and some of the raids proved costly. An aerodrome in Central Burma was also raided several times with little effect. No further withdrawals by British forces on the ground were reported during the week, and R.A.F. fighters and bombers were constantly in action against the enemy and in conducting reconnaissance over and behind the fighting area. The Japanese shelled and bombed an island in the Martaban sector, near Moulmein, and attempted to invade it by throwing a pontoon bridge across the water.

On Luzon island, the Japanese appeared to make slight progress in the Bataan Peninsula, but their attempts to land forces from Manila Bay brought them nothing but disasters. Their preparatory bombing had apparently not been thorough enough, and when the landing craft were making for the beaches, the guns of Corregidor Island and artillery on the Peninsula opened fire. Thousands of Japanese were reported to have been killed or drowned. The attempt to make a flank attack was then abandoned and enemy reinforcements were landed in the Lingayen district some distance to the North.

Port Moresby (Papua) was bombed five times by Japanese long-range flying-boats. Port Moresby is only 320 miles from the Australian mainland. Port Darwin had an alert at the week-end, but nothing came of it.

Most of the air actions undertaken by Allied Air Forces were largely defensive, but Flying Fortresses of the U.S. Army Air Forces bombed the aerodromes at Kuala Lumpur and Kuantan (Malaya), and also sank two enemy transports off Balik Papan (Borneo). Kluang aerodrome was bombed by the R.A.F., and the Royal Australian Air Force made its fifth raid on Rabaul (New Britain), now in the hands of the enemy. Dutch naval aeroplanes attacked a large transport off the West coast of Borneo and left it sinking.

Official communiqués and news agency reports issued during the week told of the certain destruction of 42 Japanese aeroplanes. Nine were shot down by Flying Fortresses near Balik Papan; 12 were shot down by pilots of the American Volunteer Group and the R.A.F. in Burma, and 15 were destroyed in raids on the Netherlands East Indies. The reported losses of the Allied Air Forces were 16. This figure included the 11 American bombers which were lost in the attacks on the Marshall and Gilbert Islands in mid-Pacific at the beginning of the week.

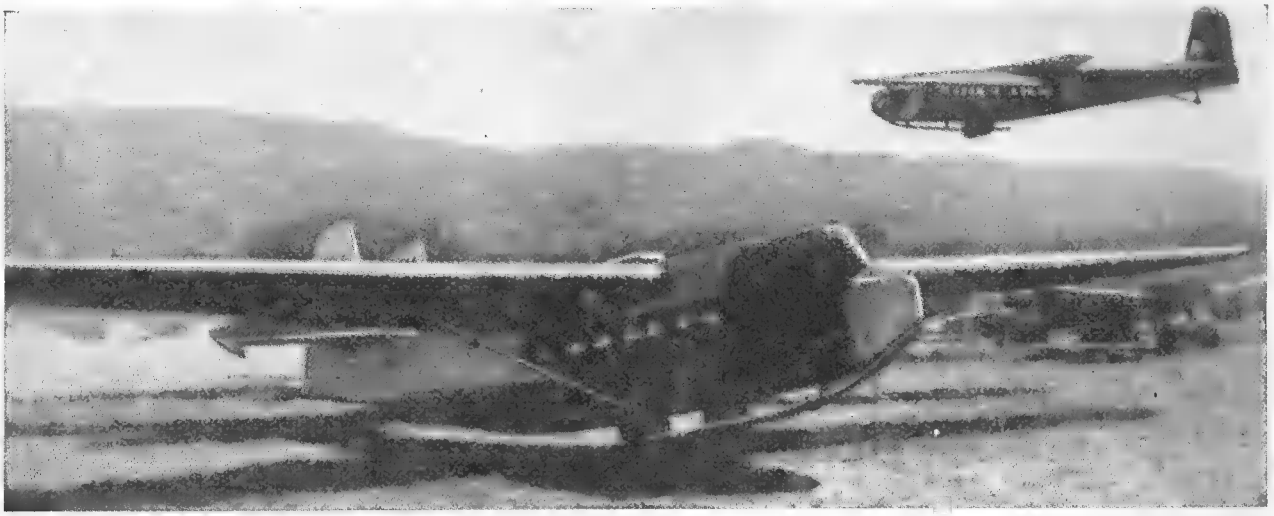
Near East

British forces in North Africa were again unable to halt or check Rommel's drive eastwards, and at the week-end the Germans claimed that they had reached Gazala, 30 miles West of Tobruk, and that the Jalo Oasis, far to the South of Jedabia, had been re-occupied. The claim to have captured Gazala was repudiated by the British. Derna was lost on the night of Feb. 2-3.

Fighter sweeps and bombing raids by the Royal Air Force, the South African Air Force and the Royal Australian Air Force were made on a large scale whenever the weather was favourable. Most of the attacks were directed against enemy supply columns and lines of communication, particularly in the Misurata, El Agheila, Jedabia, Sirte, Ras el Aali, Maraua, Mersa Brega, Derna, Carmusa, Lamluda and the Benghazi-Barce-Benina areas. The raids were made by day and by night, and caused much damage to vehicles and many casualties among troops.

Raids were also made on Tripoli, where good results were

BOOM BOAT.—Germany seems to be going in for designs with twin tail booms in an enthusiastic manner. Here the Blohm und Voss Ha 138B flying-boat is seen in the air. Other designs with booms include the Fw 189, the Fw 198 and the twin boom gliders.



AIR TRAILERS.—A composite picture of German troop-carrying gliders of the type first used in action against Crete. They are of welded steel tube construction with a wood wing.

observed, on Benghazi harbour, and Buerat el Hsun, where ships were attacked. Naples and Palermo were bombed on the night of Feb. 2-3, and a goods train near Carini (Sicily) and a railway bridge were attacked in daylight on Feb. 4. Aeroplanes of the Fleet Air Arm torpedoed three enemy merchant ships, one of which ran aground and another caught fire. Early in the week air reconnaissance showed that one of the two merchant ships torpedoed by naval aeroplanes on Jan. 30 was stationary and burning.

Little news was contained in official communiqués of enemy air activity over Libya. On one occasion, a small force was reported to have approached a British landing ground and to have had an Me 110 shot down by the fighters which intercepted it. General Rommel may have deliberately sacrificed some of his air support that he might supply fuel to his tanks and thereby gain greater advantage. This decision, if it was made, no doubt rested on the knowledge that the British equipment is inferior to the German in weight and fire power.

TOTAL LOSSES ■ THE AIR WAR* (To dawn, February 9).

	Axis Air Forces	Imperial Air Forces
Machines destroyed in combat	7,832	4,080
■ by A.A. gunfire	21,401	11,600
Personnel		

* Excluding Russia and the Far East.

The R.A.F. and its associated Air Forces lost 12 aeroplanes during the week Eight were lost in one day's operations. Raids on Malta showed no diminution either in frequency or intensity. The only confirmed success of the defences was an Me 109 shot down by the island's A.A. guns. The enemy appears to be using such stronger fighter screens for his bombers that the defending fighters are badly out-numbered and have little chance to repeat their earlier successes. Nevertheless, they have damaged many of the raiding bombers and fighters. The Regia Aeronautica now seems to have little part in the operations against Malta; at one time it was wholly responsible for the attacks.

Russia

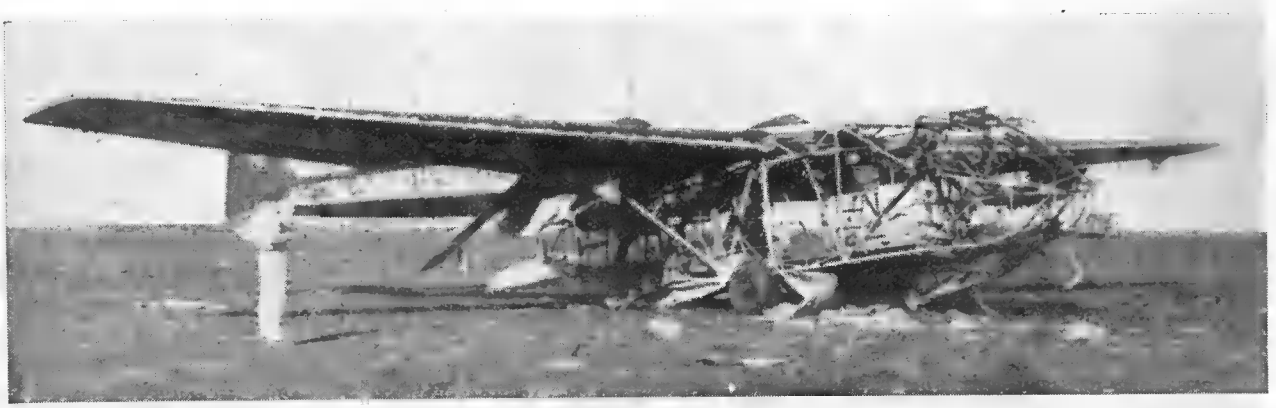
More territory was regained by the Russians last week, but only one place was named—Gavrilovka, 65 miles South of Kharkov. Twenty other inhabitated localities were re-taken in the Leningrad sector, and four on the Southern sector. At the week-end a fierce struggle was in progress for Rzhev, which was reported to have been surrounded by the Russians. German counter-attacks at many points failed to stem the Russian advance

An increase in the number of aeroplanes lost by the Luftwaffe, as reported by the Russians, suggested that the Germans had been obliged to resume air operations on a more extensive scale than in recent weeks. The Russians stated that by attacks on their aerodromes, in air combat and by A.A. gunfire, the Germans had lost 199 aeroplanes, many of them in the Moscow area. The Russians lost 49.

Supplementary communiqués issued by the Russians often described the work of the Red Air Fleet in support of the Red Army. That for Feb. 5 read: "Our air units destroyed or

GERMAN, ITALIAN AND BRITISH LOSSES—FEBRUARY 1-7, 1942

Date	Axis (N. Europe)		Axis (Near East)		R.A.F. (N. Europe)		R.A.F. (Near East)	
	Machines	Personnel	Machines	Personnel	Machines	Personnel	Machines	Personnel
1-2-42	—	—	—	—	—	—	—	—
2-2-42	2	6	—	—	3	9	—	—
3-2-42	2	8	1	7	—	—	—	—
4-2-42	—	—	—	—	—	—	■	22
5-2-42	3	18	1	2	—	—	—	—
6-2-42	—	—	—	—	2	10	4	12
7-2-42	1	1	1	1	3	12	—	—
Totals	■	33	3	10	■	31	12	34



TWIN BOOM GLIDER.—Wreckage of ■ German glider abandoned on the aerodrome at Derna. The tail unit is carried on twin booms which resemble those of the Fw 189. Loading is thus possible through the rear of the nacelle.

Pity the Modern Canute

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P.2

ALL ENQUIRIES TO GREAT WEST ROAD, LONDON.

disabled 13 enemy tanks, 200 lorries with troops and ammunition, 180 carts with war material, 35 guns with their crews, seven fuel lorries and six heavy machine-guns; heavily damaged 36 railway trucks and dispersed and partly wiped out four battalions of enemy infantry."

German claims to have recaptured Feodosia in the Crimea were confirmed by the Russians last week. The Russians appeared to hold the Kerch Peninsula. In the fighting for Sevastopol, the Germans were forced to resort to positional warfare.

Northern Europe

Bad weather again interfered with the bombing of Germany. The only night operation undertaken by the Bomber Command of the R.A.F. was a raid on Brest; in daylight, bombers were engaged on offensive patrols over the North Sea on two occasions. According to a German statement, a Hampden was shot down by fighters near the North-West coast of Germany; altogether, four bombers were lost in the two operations.

Fighter Command also suffered from the weather, but a Spitfire—one of two patrolling the Cherbourg area—attacked by four Me 109s, damaged two and shot one down before a cannon shell forced him to break off and return to base. Another Spitfire shot down a Dornier Do 217 off the East Coast of England.

Beauforts of the Coastal Command attacked a well-guarded tanker off the coast of Brittany, but conditions prevented the results from being noted.

Ships at sea had a good week. Two Ju 88s were shot down by escort vessels during an attack on a convoy. In another convoy attack, a corvette accounted for a Focke-Wulf Kurier,

FOR INVASION.—An American design for a 12-seat troop-carrying amphibian glider now in course of construction for the U.S. Navy.

and in yet another, the guns of two steamers brought down a Dornier. Another Dornier taking part in the same attack was sent down by an escort fighter.

Single aeroplanes of the Luftwaffe, under cloud cover, dropped bombs at points on the coasts of England and Scotland, but caused little damage and few casualties. Night raiding was slight, and no night raiders were destroyed.

A statement from Washington issued during the week announced that the R.A.F. had recently dropped a million-and-a-half American leaflets bearing a message of cheer to the French people and urging them not to give up hope of ultimate victory for the allies.

OPERATIONS OF THE FIGHTER, COASTAL AND BOMBER COMMANDS OF THE R.A.F. From February 1 to 7, 1942.

Sunday, February 1

Operations cancelled.

Monday, February 2

DAY ... One Me 109 destroyed by a Spitfire during offensive patrol in the Cherbourg area. One Do 217 shot down by Spitfire off the East coast of England. Beauforts of Coastal Command attacked enemy tanker escorted by patrol vessels off coast of Brittany. Two Beauforts and one Spitfire lost during day's operations.

Tuesday, February 3

DAY ... Ju 88 shot down by H.M. trawler Cornelian and H.M.S. Atherstone. Ju 88 shot down by the mine-sweeper H.M.S. Britomart.

Wednesday, February 4

Operations cancelled.

Thursday, February 5

DAY ... Focke-Wulf Kurier shot down by Corvette Genista. Dornier shot down by steamers Highwear and Helder. Another Dornier shot down by R.A.F. fighter escort. All three enemy bombers were making attacks on convoys when destroyed.

Friday, February 6

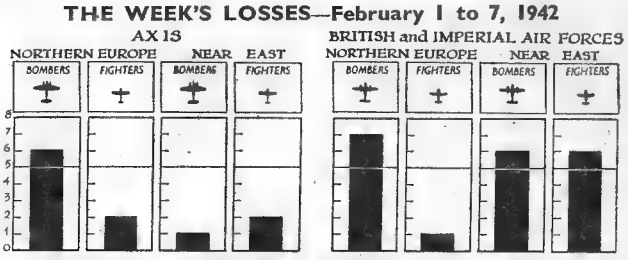
DAY ... Aeroplanes of Bomber Command made offensive patrol over North Sea. One lost.

NIGHT ... Main target: Brest. One bomber lost.

Saturday, February 7

DAY ... Offensive patrol by Bomber Command over North Sea. One Me 109 shot down; three bombers lost.

THE WEEK'S LOSSES—February 1 to 7, 1942



THE WEEK'S LOSSES AT A GLANCE.—Comparative Axis and British losses in the Air War for the week February 1 to 7, 1942, inclusive. The graph does not include aeroplanes destroyed on the ground or those destroyed in Russia and the Far East. The comparative losses are: Northern Europe: Axis (daylight offensive) 6 bombers; (defence by day) 2 fighters. British (daylight offensive) 6 bombers and 1 fighter; (night offensive) 1 bomber. Near East: Axis (defence by day) 1 bomber and 2 fighters; British (day offensive) 3 bombers and 3 fighters; (defence by day) 3 fighters; (night offensive) 3 bombers. Approximate personnel losses suffered by the respective Air Forces were: Northern Europe: Axis, 33; British, 31. Near East: Axis, 10; British, 34.

NO MORE TO GO FORTH.—A Fiat G.50 single-seat fighter found on an aerodrome in Libya during the advance of our Eighth Army.

The Economy of Air Power

The clearest statement of the relationship between the Royal Air Force and the other Services which has appeared in the course of the War is to be found in two contributions to the daily press made last week by Marshal of the Royal Air Force Lord Trenchard. He chided those who tend to blame the Air Force every time an admiral loses a ship or a general makes a blunder, and he showed what the Air Arm gains in flexibility and power of concentration for particular purposes by being a separate Service.

This statement of the case was contained in a letter to "The Times" and two articles in "The Daily Telegraph."

In his letter to "The Times" Lord Trenchard wrote:—

IN YOUR COLUMNS of January 31 "Commodore of Convoys" asks for an explanation of the system of co-operation between the Luftwaffe and the German Army and Navy. There is no doubt—and it should be recognised here—that Germany copied England.

In Germany the armed forces are organised in three services of equal and independent status, the system closely resembling the British model, except that in Germany the anti-aircraft force also forms part of the Luftwaffe. When two, or all three, services are acting together in a campaign, each preserves its independent status in carrying out a combined plan. In no campaign has the Luftwaffe been placed under the command of a general or admiral.

The dive bombers have often been cited as an example of the subordination of the Luftwaffe to the German Army. These aircraft were, in Norway, employed mainly against naval targets, as also in the Battle of Britain, and in the Mediterranean. They remained under air command while operating with the German Army in Flanders. The relationship between the German Navy and the Luftwaffe is the same. The German Navy does not command the German shore-based air forces which operate over the sea. These remain under the command of an independent air force commander. The reconnaissance aircraft carried at sea in the German battleships and cruisers form part of the German Air Force and are flown by air force and not by naval personnel. All the victories which Germany has won have been achieved under the three-service system which "Commodore of Convoys" condemns.

It is known that in Libya, General Rommel has not been in command of the German air forces. These are under the command of Field Marshal Kesselring, who is the Air Officer Commanding-in-Chief, Mediterranean Area. Their method of command has, therefore, been similar to our own.

Nor do I understand the reference by "Commodore of Convoys" to the German communiqués which he states are issued by the German High Command—General Rommel. General Rommel publishes no communiqués—he presumably renders reports dealing with army matters to his superiors, and these, together with air and naval reports, are rendered, in accordance with German practice, through the channel of communications of the appropriate service to High Command headquarters, where a combined communiqué is issued, dealing with all three services. There is no question of a German Army commander in the field issuing communiqués in regard to the Luftwaffe. The German High Command headquarters covers all three services.

"Commodore of Convoys" is under the misapprehension that the right flank of our Army in Libya comes under the Army Commander-in-Chief. I am surprised that anyone should make such a mistake. The right flank of General Auchinleck's forces rests on the sea, and is there constituted by a naval force operating under a separate commander-in-chief. Would he suggest that these naval forces should come under Army command?

Let us consider the similar problem in Malaya, where the enemy is able to make landings on our sea flanks behind our land forces and compel them to retreat or cut them off. Is this because the organisation for control of our naval forces there is incorrect and should be remedied by providing a small separate Navy to form part of the Army and to serve under its command? Surely the reason lies not in any system of organisation, but because we are not able, for the time being, to provide adequate sea forces to secure control of the sea and naval superiority. This is equally the case of our misfortunes in the campaigns prior to the present one in Libya. We have not possessed the air forces sufficient to secure air superiority. And this misfortune, in turn, is due to the failure of the older services and the Governments of those days, until just now, to realise the truths that the air staff have been preaching for so many years: that "no sea force is complete if it merely floats on the sea," and that "the same holds good for land forces."

Moreover, the sea forces operating on the right flank of our armies in Libya have themselves to be protected by our air forces against air attack. Must we have a second air force in Libya for these protective duties and make it a part of the forces of the naval Commander-in-Chief? A third air force would, of course, be necessary in order to gain and maintain that superiority over the enemy's air forces which is essential if we are to obtain freedom for our aircraft to give protection and direct support in battle to our land and sea forces. We cannot afford—perhaps no country can afford—to provide three separate air forces of this kind. Only by pooled and centralised control can the manifold and unlimited commitments of the air forces be met. By central control, as we find in Libya to-day, the same air units can be employed at one time to protect our warships or shipping convoys supplying the Army, at another to strike direct at the enemy's fleet or shipping convoys, at a third to fight for air supremacy, at a fourth to intervene in direct support on the battlefield itself. Thus, being enabled to switch our air forces to whatever objective at the time is the most important, do we secure best and fullest use of them.

Our misfortunes in Crete were due not to our organisation—the enemy's organisation was the same as our own—but to geographical factors, to the possession by the enemy of interior lines of communication across Europe, enabling them to concentrate vastly superior forces while we were fighting many thousands of miles away by sea from our main base, the enemy being able to employ a superiority of strength in the air of more than 10 to 1 against us, and above all to operate its short-range fighters where we could not do so and where we possessed no properly defended air bases.

"Commodore of Convoys" would have us learn our air organisation and strategy from the enemy. I would quote him some extracts from the instructional notes which have formed the basis of the teaching at the German Air Staff College:—

"A new struggle has been added to the war on land and sea. The struggle is in the air. . . . The air space is not bound by the armies' fronts, it is above the army, behind the army, above the coasts and the water, above the whole people and over the entire land and possessions of our enemies. . . . The theatre of operations of the Air Force is three dimensional space. In this space the Air Force thinks and acts strategically. . . . Control of the air is the preliminary requirement for the accomplishment of the great tasks of the Air Force."

These are the very lessons which we should have learned from the teachings of our own Air Staff over many years. The Air Staff are the last we should blame for our failure to do so.

UNDER INDEPENDENT COMMAND.—An Axis encampment near El Adem in the Western Desert after an attack by Martin Marylands of the South African Air Force. One Maryland is seen pulling away after its low level precision bombing attack. The raid was designed to prepare the territory for the Imperial Forces, advancing on the ground, which soon afterwards captured the encampment.

FIGHTER CO-OPERATION.—Curtiss Tomahawks of the Middle East Command, which, under the direct command of the R.A.F., have been doing fine work in co-operation with the Eighth Army in Libya.

The following are extracts from Lord Trenchard's articles in "The Daily Telegraph":—

IN RECENT MONTHS a great deal has been written in the American Press and elsewhere to prove that the British system of an autonomous Air Force is a disastrous failure, that each and every reverse that has befallen British arms, from Norway to Crete, has been due to the existence of the third Service, and that even our successes, such as the sinking of the Bismarck, the improvement in the Battle of the Atlantic and the Battle of Britain were, for some mystical reason, in spite of, and not due to, our organisation.

I do not presume to suggest to the United States how their forces should be organised. I do not profess to be an expert on Western Hemisphere defence, and would not presume to offer advice on that subject to those whose business it is, further, perhaps, than to express the hope that they will not permit themselves to be deluded by inexpert and biased criticism into making wrong judgments on premises fantastically incorrect.

The first point to remember as a background to all consideration of the lessons of this War up to date is that we started the War in a shocking condition of weakness. For years we had been spending annually about eight times as much on the older Services as we spent on the Air Force. The lessons and portents of the last war were not generally understood; and after that war most responsible officers in the Navy and Army minimised the accomplishments of the Air Forces in the war and failed to foresee, what should have been plain for all to see, the potentialities of air power 20 years ahead.

Fifteen years ago, I, as Chief of the Air Staff, was advocating that Malaya should be made a great air base and that our limited allotment of money should be spent on bombers and torpedo aircraft instead of on the huge guns there now.

The situation is very different to-day. But the significant fact is that in only two major operations have we had anything approaching the necessary air strength—namely, the Battle of Britain and the recent operations in Libya. And we were only able to secure that strength by a ruthless adherence to the one great principle of air warfare—the principle that in itself not only justifies, but imperatively demands, a single autonomous Air Force—that principle of concentration of the greatest available force on the task that is decisive at the time.

No Englishman will claim that we have not made mistakes—often very serious mistakes—but we are a democracy on the defensive, fighting for a principle, and that is a very different thing from being a totalitarian aggressor fighting for World domination, backed by colossal force built up at the expense of everything that democracy deems worth living for, in possession of the strategic initiative and free from any of the hampering restrictions of ethical principle or international honour.

In a democracy—*because* it is a democracy—the fighting man is the servant of the statesman and strategy is profoundly affected by internal and international politics. The military chiefs are the advisers on military policy and the executives through which that policy, once decided, is put into effect.

It is, therefore, all the more important that advice on the application of air power should be the responsibility of a single head of a centralised Service, working as the chief of an expert staff who have made a life study of air power and its problems; and that the decisions of the political authority, the Prime Minister and the War Cabinet, should be capable of being translated into action with that promptitude and administrative efficiency which would be impossible under divided control.

The principle of concentration on the decisive point is indeed the essence of air power. No serious exponent of air power or of the system of a third Service claims that war can be won solely by air forces. No one weapon, no single Service, no specialised military method can win any war. But the misuse or failure to take advantage of any one military method may well lose a war, and can very easily prolong it disastrously.

We cannot be stronger than the enemy everywhere all the time—if we could be, it would cease to be relevant, because the war would be won. So we must use our air resources flexibly as our major national strategy demands at the time—as the Germans do. We can only do that if we have a single autonomous Air Service, as the Germans have.

Where their organisation is superior to ours is first in their centralised high direction, which controls and co-ordinates the effort of all three Services; and, secondly, in the fact that they have ruthlessly discarded outworn naval and military traditions, have allotted to air power its proper share in their plans, and have remoulded their naval and military technique to suit the conditions of the air age.

In this latter respect we have much to learn from them; armies and fleets are still expected—or have until very recently

SPOTTED STUKA.—A camouflaged Ju 87B shot down by a British fighter in the Western Desert. This slow and vulnerable dive-bomber has been particularly successful in the lightning raids made by the German forces in countries where fighter opposition was not great or was disorganised in the first hours of the conflict. When co-operating with the Army or the Navy the Stukas have remained under independent air command, after the fashion of the R.A.F., which the Germans took as their model.

been expected—to do things they are quite unable to do, such as fight a land war without air superiority or control narrow waters which are dominated by hostile air power.

Conversely, it is not unknown for air forces to be expected to perform tasks for which they are quite unfitted, or at least can only perform by a quite disproportionate expenditure of effort, manpower and material, and then not so effectively as the land or sea forces whose proper tasks they are.

THE BIG BOMBER.—A Short Stirling of the Bomber Command of the R.A.F. Bombers of this type have carried out crippling raids on Germany and enemy-occupied territory, in areas where co-operation with the Army and the Navy is for the time being out of the question. Yet in their raids on ports they are directly helping the Navy's blockade.

Adml. Yarnell, who in a recent article in " Collier's Magazine " makes the extraordinary assumption that the loss of Crete was due to some arbitrary and one-sided decision on the part of the Royal Air Force to withdraw air support, is not alone in his failure to understand the profound influence of geographic conditions on the exercise of air power.

He would not suggest, for instance, that the United States fleet should be told to operate in Japanese waters without a base in the Far East or a reasonably secure line of supply for its tankers and ammunition ships. Yet an air force without bases and without a secure system of supply for fuel, bombs and spare parts is just as helpless as that fleet would be.

But if we have to fight without adequate air support we must do so with our eyes open; and we must not hope to be able to alleviate the results of a military set-back in Greece or a naval disaster in the Gulf of Siam by breaking up the Air Force and putting bits of it under the Army and Navy—and thus making sure that we shall have neither adequate air strength anywhere nor the expert single advice as to how to use what we have.

Our basic strategic policy cannot fluctuate with every wind that blows, because on our strategic policy depends our production policy, and on our production policy depends our capacity to have aircraft of the right types in the right numbers and in the right place when we want them. Thus we must concentrate on the vital things first and shape accordingly our international policy and that part of our military policy that is within our control.

Dispersing Effect of Bomber Command

We concentrated resources in personnel and bomber-type aircraft on building up Coastal Command to a point at which it was somewhere near adequate at the end of 1941 for its tasks in conjunction with the Navy in keeping the menace in the Atlantic and Home Waters within measurable limits. We did this at the expense of Bomber Command.

In Bomber Command we have our supremely flexible weapon, which can be, and is, called upon as the need arises to support the Navy when a critical situation occurs at sea, by bombing enemy naval forces and bases and by mining, and which is available and ready if invasion comes to throw its whole weight in support of the Army against the invader.

Yet air power cannot play its part in helping us *win* the war unless we maintain unswervingly the policy of the offensive and concentrate steadily and consistently on building up a Bomber Force which, while always available if required for defensive operations in support of the other Services, has suitable aircraft and suitably trained crews in adequate numbers to sustain the offensive against our primary enemy, to wear down German resistance from within, and play a major part in creating that situation without which no Allied Army can ever hope to force its way into Germany.

No major military or naval operation can hope to succeed in these days without adequate cover against enemy air action and effective support by our own air striking force; that surely is a lesson of this War which requires no eloquence to emphasise.

But it hardly needed Pearl Harbour to prove that the air defence of a fleet base or of an area of land operations is not a naval or an army function. There is a natural tendency for every subordinate military or naval commander to clamour for close air protection by squadrons under his own command; that tendency, unless rigidly resisted, can only end in disaster.

The control of the operations of air forces which measure their speed in miles per minute and their range in terms of hundreds—nay, even thousands—of miles cannot possibly be effectively exercised by men whose vision is limited to the horizon as seen from the seat of a motorcar and whose whole training and instinct is to regard 100 miles as a day's journey.

No airman would dream of claiming that he is qualified to command armoured divisions or flotillas of submarines; yet for some mysterious reason many soldiers and sailors appear to regard themselves as perfectly capable of controlling air forces, and a popular remedy for naval or military misfortune is to demand that the control of the Air Force should be divided and handed over to sailors and soldiers.

There is a great deal of egregious nonsense talked about the need for specialised training for air operations in support of armies and navies; the uninitiated would almost be led to believe that it is necessary to breed a special type of man to recognise a ship at sea or an enemy tank in the desert. Some special training is obviously necessary, but it is surely equally obvious that, after the first few months of a war, the long and intimate experience and highly specialised training that is so often claimed as essential for effective air support of land and sea forces simply is not available.

It might be possible to start a war with a Fleet Air Arm or Army Co-operation force manned by experienced naval and army officers, but they certainly would not last long and their replacements would have to come—as they do now—from keen young volunteers from civil life with no specialised naval or military knowledge.

If, for instance, Coastal Command to-day were officially part of the Navy, the crews would no doubt be wearing uniforms of darker blue, but they would be exactly the same crews with exactly the same experience.

In point of fact, the Royal Air Force crews of Coastal Command—though they persistently decline to call their bedroom a cabin or a Service motorcar a liberty boat—have given, and are giving, service that could not be excelled by the smartest sub-lieutenant who ever passed top out of Dartmouth.

So with the land. Gen. Auchinleck's frequently reiterated praise of the air support and co-operation in the Libyan campaign means only that at last we have been able to undertake a land campaign possessed of sufficient air forces to ensure that air supremacy without which no land campaign can succeed.

Fallibility Not R.A.F. Attribute Only

No one suggests that Royal Air Force crews never make mistakes. The suggestion by Adml. Yarnell, in the article in a recent issue of " Collier's Magazine " to which I have referred, that the Royal Air Force failed to report what they saw of the preparations for the invasion of Norway is entirely unfounded; abnormal activity on the German Baltic coast was reported by the Royal Air Force and the information was passed immediately to all concerned, including the War room in the Admiralty.

Of course airmen sometimes make mistakes. They are no more infallible than sailors or soldiers. It was a naval officer from an aircraft carrier who let fly with a torpedo at a British cruiser during the pursuit of the Bismarck—a fact for which, for some inexplicable reason, Adml. Yarnell sees fit to blame the Royal Air Force.

Mistakes are bound to happen in any fighting service in any war. Yet it never seems necessary to suggest, when an admiral loses a ship or a general makes a blunder, that the Navy or Army should be split up and half of it handed over to the Air Force.

It comes down to this—there is no such thing as separate air strategy or an " independent " Air Force, any more than there is a separate sea or land strategy or an " independent " Navy or Army. All strategy is interdependent and interlocked, and the extent to which one or other arm predominates is determined by a country's national policy, its geographical position, the character of its population and the nature of its resources. But air warfare has its own technique, its own tactics, and its special administrative foundations.

And to-day, whether we like it or not (and it is an unfortunate fact for England), the air is a decisive factor in any campaign—and has been *the* decisive factor in more than one. So any Allied nation that neglects its air power or declines to move with the times and free itself from the trammels of a military or naval tradition that has been obsolescent since Wright first hopped off the ground at Kitty Hawk does so at its own great peril and to the serious disadvantage of the Alliance.

HANDLEY PAGE "HALIFAX" .... ROLLS-ROYCE "MERLIN" ENGINES

ROLLS-ROYCE AERO ENGINES

For Speed and Reliability

"The Rolls-Royce Merlin motors are in a class of their own. If any aero-motor has earned to have the confidence of the crews it is the Merlin. The men of the Halifax squadrons seem to appreciate their good fortune." "Aeroplane" 5th Feb. 1942.




German Aero

Below is an article which we had hoped at quite an early stage in authorities were unwilling to agree to its publication. They have now and the Ministry of Aircraft Production has released the article for some of the benefits accruing from the enterprise of "The Aeroplane" waiting, Mr. J. H. Clark has prepared drawings which are more detailed

I—

SIX TYPES of German aeroplanes are of particular interest to aeronautical engineers in this country as regards structural analysis. They are:—

The Dornier Do 17 reconnaissance bomber.
The Heinkel He 111K bomber.
The Junkers Ju 87B and Ju 88 dive bombers.
The Messerschmitt Me 109 and Me 110 fighters.

Variants of some of these have been built, but as the variations do not affect the main structure there is no need to mention them in these notes. First-hand information of all the six types can be gained easily, because so many have been shot down over Great Britain, and were concentrated in large dumps. One had only to visit such a dump to find out anything one wished about the structures of these types. One could find them quite intact or in any degree of disintegration, so that the whole or the parts might be examined with ease.

The following notes are in no sense a deep appreciation of these structures, but are intended to give a brief comparison of what the designers have done, together with a few guesses why:—

Wings

Wings of all these types are of modern stressed skin construction, but in none of them does the wing skin carry more than torque and drag loads. This means that the wing bending is taken by ordinary spars with heavy concentrated flanges and not by a skin and stiffener arrangement as in certain British and American types.

In all six of the types the flanges of the wing spars are built of extruded sections, and five of the six have plate webs. All except the Messerschmitts have two spars, both the Me 109 and Me 110 having the single spar, which has been used by Willy Messerschmitt since his early days. The design of the spars varies widely between the four constructors, and it may be of interest to compare them.

The flanges of the spars of the outer wings of the Heinkel He 111K are basically of thick angle section, but with the addition of thin lugs on each side, as shown in Fig. 1, for the attachment of the skin plating. These lugs make easy the riveting of the skin to the spar without drilling out a lot of metal, and are found on only one of the other designs, and then only to a limited extent. As in all extruded spar sections, a certain amount of machining has to be done to obtain the desirable reduction in section toward the wing tip. The steps which form the lugs are probably machined and not produced by the extrusion press, although this is not known for certain.

Heinkel spars are unique in that the flanges form part of the wing surface and, therefore, have the greatest possible effective height for the type of section used. In the other designs to be described here, and, in fact, in all designs known to the writer, there is none in which the spar flanges are as close to the outer surface of the wing.

For instance, no such effort towards efficiency is to be seen in the Junkers Ju 88. The flanges consist of Tee extrusions,

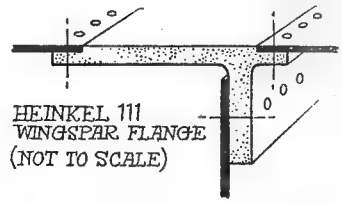


Fig. 1.

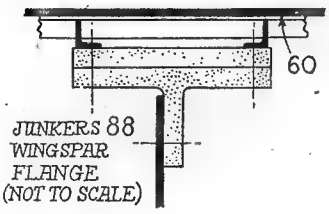
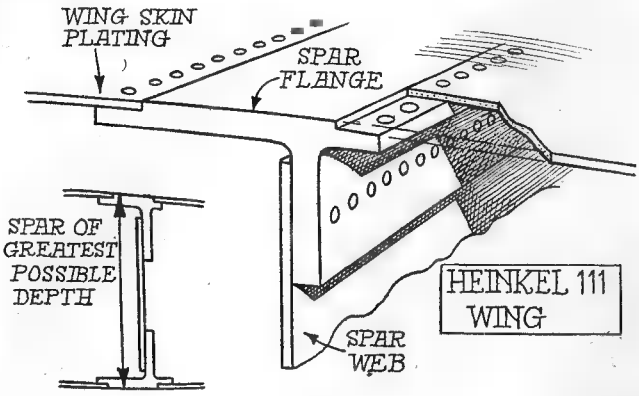
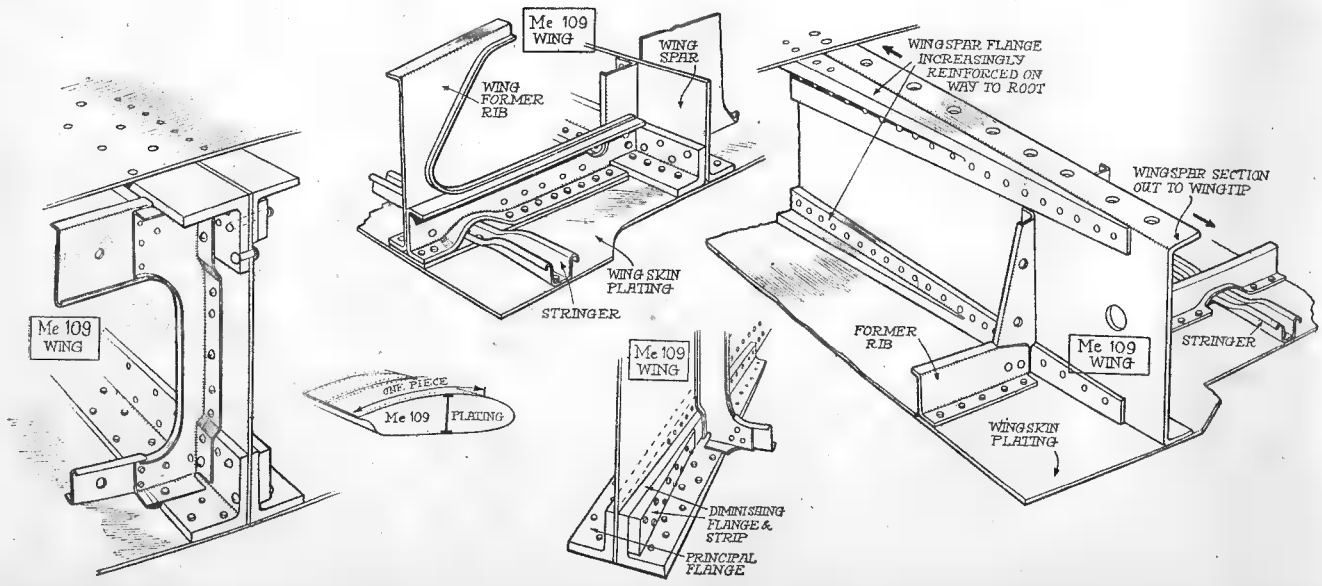
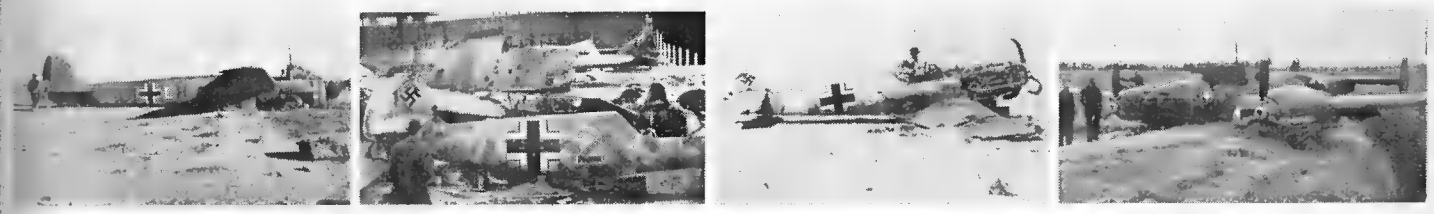


Fig. 2.







plane Structures

the War to present exclusively to our readers. At that time the decided that any security reasons there might have been no longer apply general consumption. We are glad that a wider public will share in in commissioning this article many months ago. In the interval of than those originally accompanying the text. These are reproduced below.

WINGS

Fig. 3.

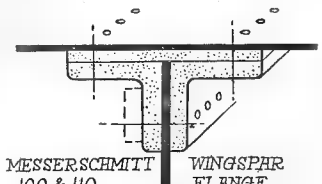
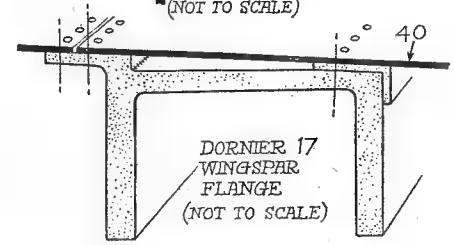
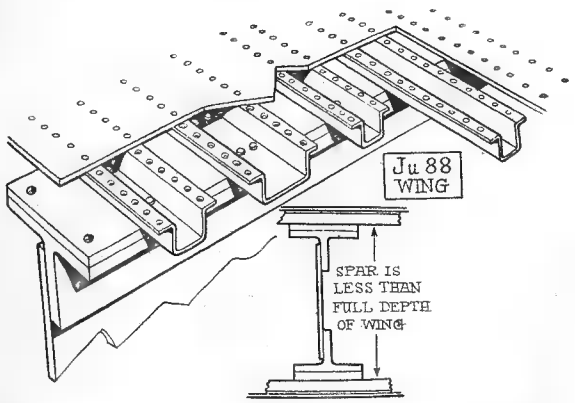


Fig. 4.





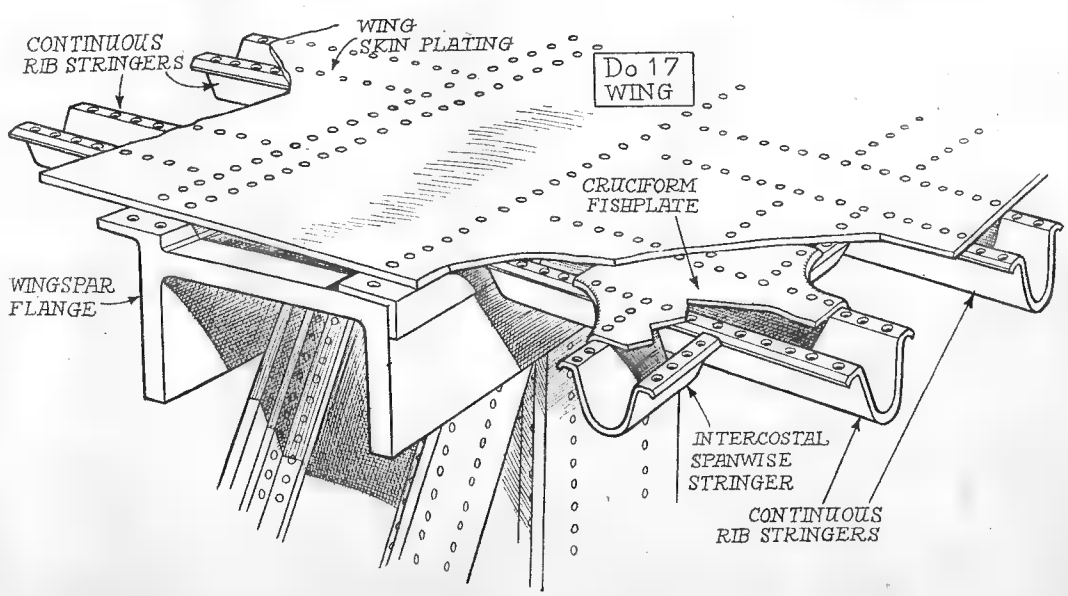
as shown in Fig. 2, to which is riveted an extruded bar to give a very thick-topped "Tee." Admittedly, concentration of material at the top of the Tee is advantageous, but the long rivets which are necessary waste much material, at least in the tension side of the spar. The skin is not even attached directly to the flange, but to stringers or ribs, which pass over the flanges. This results in a spar which is about 2 ins. shallower than the Heinkel spar would be for the same wing thickness, and it is, therefore, to that extent less efficient.

Messerschmitt spars in both the Me 109 and Me 110 are built up of extruded angles back to back, between which is sandwiched the plate web, as shown in Fig. 3. The skin is riveted directly to the angles, there being no such intermediate detail as in the Ju 88. The Messerschmitt spar is a very straightforward job, simpler than the Junkers, but not quite as efficient as the Heinkel. The use of such simple shapes as angles is a production advantage. The disadvantages of a riveted built-up spar of such simple shape are those mentioned above, namely, the waste of metal in drilling the flange, and the long rivets necessary. This may be one of the reasons why Messerschmitt attaches extra doublers to the vertical sides of the angles in the Me 109, as shown dotted in Fig. 3.

The Dornier Do 17 is the most complicated of the lot, and is the oldest design. The flanges, shown in Fig. 4, are channels with special lugs for the skin attachment. Instead of the plate web used in the other types, the Do 17 has a girder web built up from channels riveted inside the channel flanges. The main feature of the flange is the wide lip for plating attachment. This is wide enough for two rows of rivets, allowing a butt joint in the skin plating. In addition, the plating is attached to the other side of the flange through a small angle as shown. The reason for the use of this light angle is not obvious, for it can contribute nothing to the local skin stiffness and can increase the bending strength but little. Possibly it is a point of reference or register used in jigging the plating, and when butted against the back of the flange, as shown, gives the correct position of the skin for riveting to the front of the spar. The Dornier spar extrusions have a fault in that when a thin overhanging lip is combined with thick main walls, as in this instance, the section becomes very difficult to extrude with a sound lip. However, once the thin lip is produced, it is clearly efficient structurally. One wonders why the design is spoilt by riveting through the thick part of the flange as well.

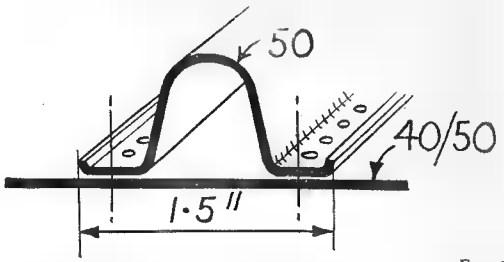
The wing plating on all the types is joggled or butted and flush riveted (except for some parts of the Ju 87), the quality of the finish being not quite as good as the average American finish. In general, the skinning is fairly thick; none that I have measured being under 35 thous. (20 SWG), and some is as high as 70 thous. (15 SWG). So far as can be seen, all the rivets have 120-degree heads, the formed head being a simple upset on the inside. Much of the countersinking is dimpled.

In the He 111K and Ju 88, efforts have been made to



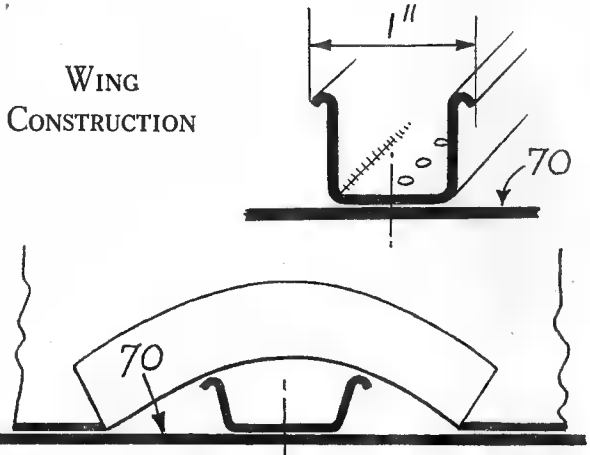
maintain true and fair wing sections by avoiding the use of spanwise stringers. The use of spanwise stringers is easier than the use of chordwise stringers because the former are usually straight, but the latter must be curved to conform to the wing section shape. However, the use of spanwise stringers tends to result in an irregularly contoured wing section, particularly after some time in service, which would cause some drop in speed. The chordwise stringer, being of a shape which forms and retains the wing contour, has not this disadvantage. In the He 111K the fairness of the section tends to be broken slightly by the booms of the spar, but these are the only spanwise attachments of the skin. On the Ju 88 the passing of the booms over the spar flanges as described above results in a very fair wing section quite undisturbed by spanwise attachments. Whether this is the reason for the type of construction is not known, but it at least gives some reason for the facts observed.

The Do 17 wing rib boom and stiffeners are both formed top hats (50 thous.) attached by two rows of rivets (see Fig. 5). The ribs are continuous and the spanwise stiffeners are intercostal but attached firmly to the rib booms by cruciform fishplates or caps. This makes a close-knit but rather complicated network and uses a lot of rivets. It is probably the most expensive of the six types.



DORNIER 17 WING STRINGER SECTION

Fig. 5.



WING CONSTRUCTION

MESSERSCHMITT 110 WING STRINGER & RIB

Fig. 6.

NOTE.

People are not agreed on what is the best way to classify metal thicknesses. Some think in gauges, which are awkward because the smaller the gauge the thicker the material. Some think in thousandths of inches, which has its own difficulties because the unit, 1/1000 of an inch, is rather small and also because the word " thousandth " is difficult to pronounce properly. To avoid that, one speaks of " thous." and in the text of this article that word is used for thousandths of an inch. The other alternative is millimetres, which is most useful because the unit is the right sort of size. Unfortunately, it is seldom used in Great Britain. To satisfy all, the following little conversion table is given. It covers the gauges mentioned in this article:—

GAUGE CONVERSION TABLE

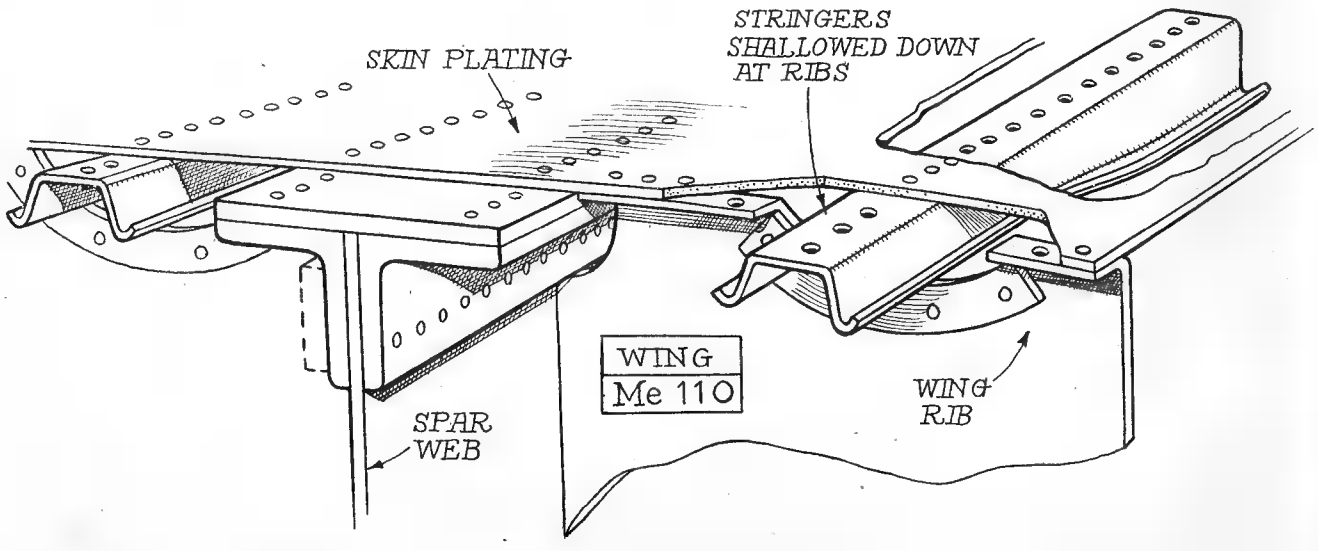
Gauge SWG.	Thousandths of Inch.	Millimetres.
14	80	2.03
15	72	1.83
16	64	1.62
17	56	1.42
18	48	1.22
19	40	1.02
20	36	0.91
21	32	0.81
22	28	0.71
23	24	0.61

The numbers on the illustrations to this article which have no units shown are thicknesses in thous.

Lack of spanwise skin stiffeners, as in the He 111K and Ju 88, is quite consistent with the use of heavy spar booms, as it ensures that only the spars will take the bending. If spanwise stiffeners were used they would help with the bending and cause more redundancy. Whether their aid would be worth the redundancy need not be discussed here.

In the Messerschmitt types there are a considerable number of spanwise stringers (Fig. 6) which are continuous through strengthened cut-outs in the ribs. When passing through such cut-outs they are flattened somewhat in section as shown in Fig. 6 in order to avoid too great a disturbance of the rib shape. The wing skin thickness of the Messerschmitt types probably varies considerably over the wing, but over a large proportion of the Me 110 wing it is 70 thous., which is very thick indeed. A spot measurement on the Me 109 gave 50 thous., but at the root it is probably thicker.

(To be continued)



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["Aeroplane" drawing

UP THE GARDEN.—A Dornier Do 217E1 bomber of the Luftwaffe photographed from another machine of the same type. We published this photograph originally on Jan. 16. At that time it had been deliberately distorted by the enemy in a successful (temporary) effort to mislead. We have now examined the photograph minutely and have been able to reconvert it to its original appearance. Points to notice are that the motors are underslung, that the nacelles extend backwards a short way behind the wing, and that the fuselage extends beyond the tailplane.

The Dornier Do 217E

SEVERAL Dornier Do 217E two-motor reconnaissance bombers have been shot down over the British Isles during recent weeks. This new aeroplane is a development of the Do 17, and has very much greater load-carrying capacity, range and all-round performance. It can be used as a dive bomber, a precision bomber, or for torpedo dropping as well as for long-range reconnaissance purposes, and is in service in several versions, one of which has a power-operated gun turret.

In general appearance the Do 217 resembles a scaled-up Do 17Z, with radial motors or the Do 215 with liquid-cooled motors. It is a two-motor shoulder-wing monoplane with a span of 62 ft. 5 ins. and twin fins and rudders. The wing is thicker and the fuselage proportionately fatter than earlier Dorniers, and the fuselage extends behind the tailplane and accommodates the dive brake.

The aeroplane, of which a photograph appears at the bottom of this page, is a Do 217E1. The later model, the 217E2, has a gun turret on top of the fuselage behind the cockpit enclosure.

Probably the most interesting feature of the machine is found in the new BMW 801 14-cylinder two-row radials which have fan-assisted cooling. Each develops 1,600 h.p. for take-off and 1,480 h.p. at 14,700 ft. The motors are enclosed in remarkably clean long-chord cowlings with frontal annular air inlets. Entry of air into the cowling is accelerated by a fan driven through gearing from the airscrew shaft. The oil cooler is installed under the leading edge of the cowling and consists of finned segment-shaped tubes. A very elaborate internal system of ducts and baffles assists cylinder cooling. Each motor has two air intakes, both inside the cowling.

Another novel feature is the exhaust system. There is no collector ring, but instead there are six exhaust stubs on top, and four on each side of the motor cowling, projecting outwards over the nacelle. The four stubs on each side of the cowling discharge under the wing and the six on the top over the wing. Three-bladed wooden airscrews, utilising a hub [illegible] a new type and having a pitch range of 86 degrees, are fitted.

The wing like the fuselage, is made in three parts, two spars being used throughout.

Slotted ailerons are fitted, and the flaps are of the split type; these are interesting in that they have a shaped nose gap. Each portion of the elevator has two tabs, one for balance and trimming, and the other for automatic recovery from dives.

An interesting aerodynamic feature is the incorporation of fixed slots in the leading edges of the fins. These probably give improved rudder control when flying on one motor.

The primary duty of the Do 217 series is bombing. Dive bombing up to a fairly steep angle is also possible when a special diving brake is installed in the tail. It can be used for torpedo dropping, and its speed obviously makes it suitable for strategical reconnaissance.

On the machine examined, four racks, each capable of carrying a 500-kg. bomb, were fitted in the bomb compartment, which is 20-ft. long. Various combinations of bombs are possible when internal and external stowage is used; for example: one or two bombs of 1,000 kg. may be carried inside the aeroplane, and two 500-kg. bombs can be slung externally under the wings. Alternatively, at least one torpedo can be carried.

Mountings are provided for four lateral MG15 machine-guns (7.9 mm. calibre), but on the machine examined only the rear pair was installed. In the transparent nose, on the starboard side, is provision for a further gun of unknown calibre, and firing forward through the bottom of the cockpit is a fixed MG 151 cannon of 15 mm. calibre.

There were three notable features in the armour-plate protection. Behind the pilot's seat is a screen of half-octagonal form, the thickness of the plate being 8 mm. to 9 mm.; the dinghy recess in the top of the fuselage is armoured; and a large piece of armour, semi-circular in form, is laid on the outside of the back of the fuselage immediately behind the cockpit. There is another external section of armour-plate laid flat on the outside of the roof of the cockpit slightly to the rear of the pilot's head. The bottom of the pilot's seat is protected.

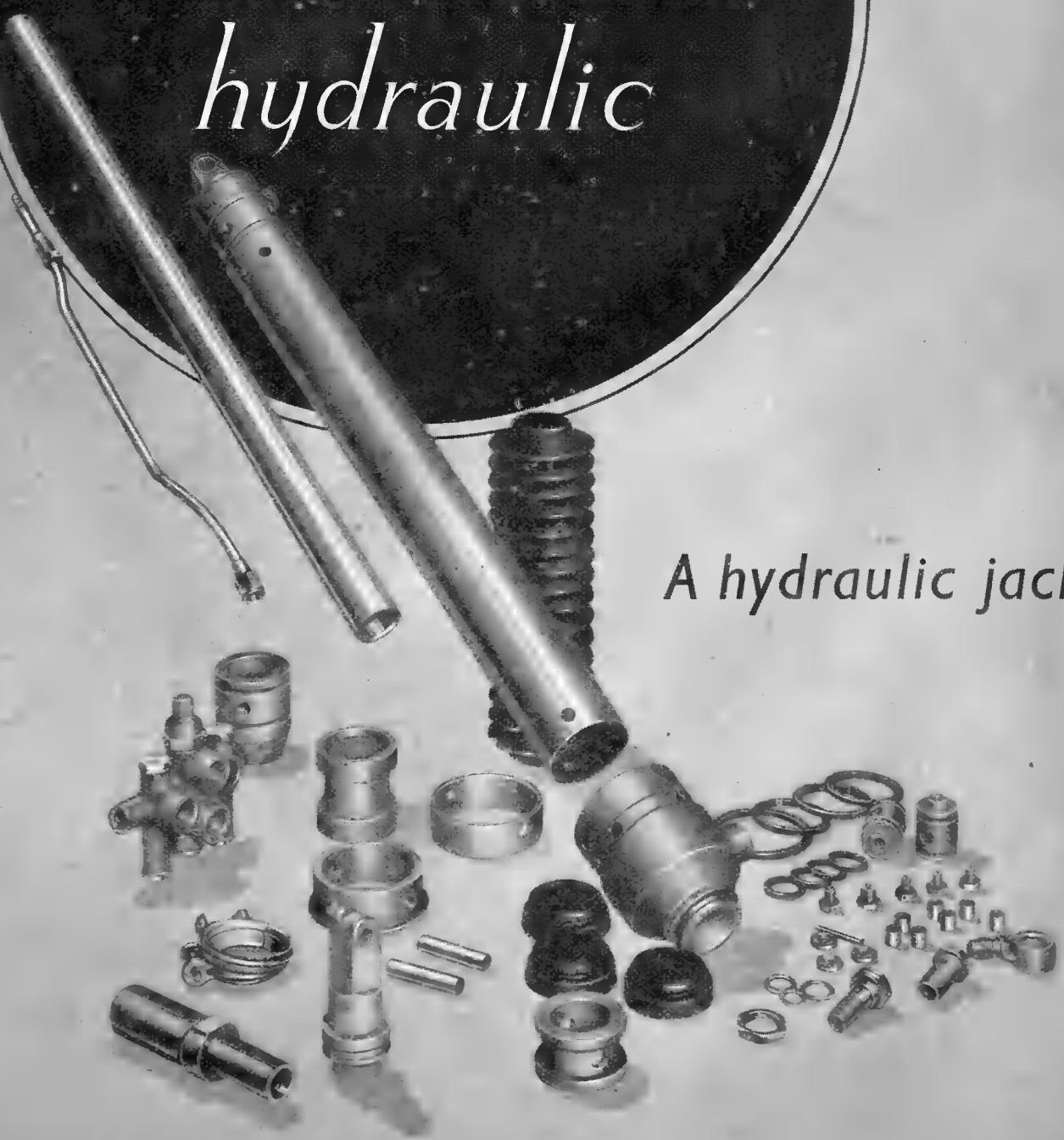
There is no armour-plate for protection of the motors.

DOWN IN ENGLAND.—One of the new Dornier Do 217E1 bombers (two 1,600 h.p. BMW 801 14-cylinder two-row radial motors).

LOCKHEED
TRADE MARK

Lockheed
TRADE MARK

hydraulic



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THE ROYAL AIR FORCE

BRISTOL BEAUFORTS ON PATROL.

The Roll of Honour

THE ONE HUNDRED-AND-EIGHTH CASUALTY LIST was published by the Air Ministry on Feb. 6. It contains 246 names of R.A.F. personnel, including 61 previously reported. Of these 59 missing believed killed in action, or missing, are now presumed killed, and two missing believed killed on active service are now presumed killed.

The List includes 18 killed in action, eight wounded, three died of wounds, 18 missing believed killed, and 71 missing. On active service 37 have been killed, 12 wounded, four have died of wounds and 14 have died.

The total of R.A.F. casualties officially reported since the War began is now 20,934.

The One Hundred-and-Eighth Casualty List is:—

Killed in Action

1375286 Sgt. E. R. Carter
610272 Sgt. K. Connel.
1167368 Sgt. J. B. Dewar.
1056826 Sgt. C. C. Gibson.
1261089 Sgt. J. F. Hemus.
1062368 Sgt. S. H. Jackson.
1153158 Sgt. R. P. Manwaring.
1377136 Sgt. E. W. Sterling.
1260187 Sgt. D. A. Watson.
982517 Sgt. W. Williams.

Previously Reported Missing Believed Killed in Action, Now Presumed Killed in Action

1304338 Sgt. J. Diggory.
1356738 Sgt. D. F. Hawkes.
580579 Sgt. T. E. Hyde.
64315 P/O J. C. Jenkins.
529825 F/Sgt. R. Jopling.
999517 Sgt. J. C. Newlands.
39335 Act. W/C N. E. W. Pepper, D.F.C.
106545 P/O K. E. A. Savage.
1053919 Sgt. W. B. M. Smyth.
923720 Sgt. R. T. Stephens.
83003 P/O F. Turner.
976170 Sgt. D. A. Wilson.
64904 P/O R. S. Wilson.

Previously Reported Missing, Now Presumed Killed in Action

747939 Sgt. H. T. Archer.
62316 P/O P. B. Ashby.
87356 P/O J. A. Basham.
561696 F/Sgt. T. Beattie, D.F.M.
974076 Sgt. T. Beattie.
910508 Sgt. A. H. Bird.
61962 P/O W. W. Burgon.
747874 F/Sgt. B. Crocker.
951120 Sgt. J. A. Donovan.
1165193 Sgt. P. C. Eyre.
927583 Sgt. D. F. Gibson.
901329 Sgt. P. W. Goodwin.
652883 Sgt. H. Gretton.
581015 F/Sgt. B. W. Grocock.
746845 Sgt. C. Hodkinson.
965678 Sgt. J. F. Hughes.
745522 Sgt. M. G. Jackson.
1002131 Sgt. J. A. B. Jamieson.
748095 Sgt. J. A. H. Jenks.
952170 Sgt. G. G. Lee.
1365815 Sgt. T. McGill.
543628 Sgt. D. H. McPhail.
745742 F/Sgt. G. C. Marsh.
88698 P/O L. J. Moore.
78549 P/O J. J. Nottidge.
45376 P/O T. P. Pratt.
73010 Act. F/L T. G. F. Ritchie.
906075 Sgt. J. B. Seden.
81416 P/O G. H. Seeley.
964528 Sgt. M. S. Soames.
909986 Sgt. W. A. Smallbone.
74691 F/O J. G. R. Sturrock.
90758 F/O J. R. G. Sutton.
36134 Act. S/L G. R. Taylor, D.F.C.
89606 P/O H. C. Tonge.
919875 Sgt. A. C. Willis.
917135 Sgt. N. S. Wilson.
942477 Sgt. K. P. Withyman.

Wounded or Injured in Action

49656 F/L J. W. Appleton.
755695 Sgt. W. L. Barcroft.
580710 F/Sgt. T. H. Bigmore.
759001 Sgt. J. Gibson.

Died of Wounds or Injuries Received in Action

1209438 Sgt. E. C. Hoskins.
67584 P/O S. N. Muhart.
82740 F/O B. E. L. Odhams.

Missing Believed Killed in Action

81377 F/O J. H. M. Davies, D.F.C.
36240 F/O D. V. Gilmour.
520797 F/Sgt. R. M. Hannan.
1059179 Sgt. L. Harding.
928276 Sgt. S. Jamieson.
111325 P/O D. S. Martin.
33271 W/C J. C. Mayhew.
1284492 Sgt. W. H. Poole.
103034 P/O A. J. Pyle.
643876 L.A.C. W. G. Sheean.
87639 Act. F/L R. P. Stevens, D.S.O., D.F.C.

Missing

42179 F/O P. O. D. Allcock.
1375391 Sgt. E. W. Armer.
751288 Sgt. H. Ashton.
1054956 Sgt. J. R. Boland.
42392 F/O G. Bunce.
1311031 Sgt. H. Carter.
755149 Sgt. J. A. Chadawy.
112733 P/O R. N. Chancellor.
905359 Sgt. J. Collins.
989237 Sgt. J. R. Conn.
1445867 Sgt. R. L. Cooke.
633261 Sgt. J. W. Durrant.
1257328 Sgt. R. W. Ebsworth.
641560 Sgt. G. G. Fell.
803507 Sgt. D. Ferguson.
921752 Sgt. D. A. Ferguson.
1375074 Sgt. M. J. Fitzgerald.
1380918 Sgt. G. J. W. Fleming.
1166146 Sgt. I. A. Flower.
751669 Sgt. L. H. Fowler.
641136 Sgt. H. D. Grey.
1108004 Sgt. D. E. Hall.
1001649 Sgt. S. E. Hedin.
1165680 Sgt. K. A. Jeffreys.
89826 P/O M. Lee.
1058192 Sgt. J. F. Liles.
1378203 Sgt. H. L. Loveday.
809126 Sgt. A. McLevy.
924027 Sgt. N. J. Mills.
904494 Sgt. P. G. Osman.
33393 Act. S/L H. Parkinson.
997069 Sgt. J. Pickup.
63801 P/O E. D. Rawes.
84674 F/O A. T. Read.
873227 Sgt. R. Shearer.
921516 Sgt. L. R. Townsend.
581544 Sgt. E. W. Walters.
1210042 Sgt. R. L. Watts.
628267 F/Sgt. D. E. Webb.
946158 Sgt. F. A. White.
638150 F/Sgt. W. Wooldridge.
778478 Sgt. W. J. Young.

Killed — Active Service

1269226 Sgt. K. G. Boulton.
60768 Act. F/O D. G. Buchanan.
1050785 Act. Cpl. T. R. Buxton.
70136 F/O K. C. Cooke.
1383433 Sgt. M. R. Cuke.
1056902 L.A.C. M. Daly.
1429099 A.C.2 G. Dandy.
42325 F/O A. T. Darling.
974733 L.A.C. H. Finn.
958798 Sgt. M. H. A. Genney.
811075 Sgt. J. J. Green.
1122451 A.C.1 J. Heyworth.
111240 P/O R. J. Hopkins.
961740 L.A.C. O. H. Jones.
1004519 Sgt. H. G. Kelly.
103503 Act. F/L A. W. Lacey.
939346 A.C.1 L. R. Lintott.
106584 P/O R. G. Littlewood.
78835 F/L L. M. Magurk.
111702 P/O D. F. Meacham.
748675 F/Sgt. W. L. Oldnall.
645583 Sgt. R. I. Peach.
1376191 A.C.2 H. J. Philips.
1376081 Sgt. B. Poupard.
566992 Sgt. N. F. Rowe.
1072395 A.C.2 W. K. Stephens
1260361 Sgt. F. J. Sunley.

A BELLYFULL.—Bombs of different sizes loaded in a Bristol Beaufort of the Coastal Command, ready to be dropped on some appropriate target—probably an enemy ship.

1371023 L.A.C. (Cadet) T. P. Watt.
42077 Act. S/L R. G. Williams, D.F.C., A.F.M.

Previously Reported Missing Believed Killed on Active Service, Now Presumed Killed on Active Service

76519 Act. F/L W. T. D. Windham.

Wounded or Injured on Active Service

43573 F/O F. A. Bidgood.
1059359 Sgt. A. J. Brogan.
61617 P/O P. N. Davey.
79579 Act. F/L F. S. Davies.
1177597 A.C.1 T. L. James.
1001660 Sgt. J. Lee.
1016009 A.C.2 C. Lutey.
1378837 Sgt. S. Shepherdson.
778202 L.A.C. G. O. Smit.
982701 A.C.1 N. Turner.
778016 L.A.C. C. A. Wood.

Died of Wounds or Injuries Received on Active Service

1176462 Cpl. H. J. A. Clare.
37307 Act. S/L J. H. Van.

Died on Active Service

541690 W.O. A. Ashford.
770790 Sgt. A. T. Baber.
543069 Cpl. H. J. Browning.
341491 Sgt. T. Clarke.
1227411 A.C.2 W. H. Clayton.
534180 L.A.C. S. Kelly.
551050 Sgt. R. Kirkup.
1055338 Cpl. P. McGlone.
1575484 L.A.C. W. J. Marchant.
44071 P/O R. F. Murphy.
1245912 A.C.2 S. W. Northy.
75962 Act. F/L B. S. B. Plunkett.
640363 Cpl. G. Reece.
1025611 L.A.C. L. Wells.

ROYAL AUSTRALIAN AIR FORCE

Killed in Action

Aus.207698 P/O R. W. Drury.

Previously Reported Missing Believed Killed in Action, Now Presumed Killed in Action

S/L D. H. Campbell.

Previously Reported Missing, Now Presumed Killed in Action

Aus.400074 Sgt. A. E. R. Barton.
Aus.407091 Sgt. A. Milne.
P/O W. Brine.

Wounded or Injured in Action

Aus.403009 P/O G. L. Angus.
Aus.400177 Sgt. J. F. Jennings.
Aus.574 F/L C. R. McKenny.

Missing Believed Killed in Action

Aus.400167 Sgt. L. J. Abbott.
Aus.400122 Sgt. J. H. Pott.

Missing

Aus.404197 Sgt. L. Brown.
Aus.404542 Sgt. A. H. Ferguson.
Aus.407294 Sgt. W. A. McAllen.
Aus.400018 Sgt. P. F. Matthews.
Aus.402147 Sgt. D. Scott.

Killed on Active Service

Aus.403384 P/O B. L. Sturday.

Died of Wounds or Injuries Received on Active Service

Aus.1112 F/L F. W. Hordern.

ROYAL CANADIAN AIR FORCE

Killed in Action

R.77112 Sgt. P. L. Gurd.
R.56179 Sgt. W. T. Lee.
R.70767 Sgt. J. M. McKenzie.
J.5027 P/O F. H. Sutton.
R.78052 Sgt. J. C. Tomlin.

Previously Reported Missing Believed Killed in Action, Now Presumed Killed in Action

J.3268 P/O C. F. Hart.

Previously Reported Missing, Now Presumed Killed in Action

R.60728 Sgt. H. H. Bedard.

Missing Believed Killed in Action

R.64553 Sgt. T. J. Arsenault.
J.5918 P/O W. F. Hull.
J.2928 P/O R. F. Patterson.

Missing

J.15078 P/O G. A. Chamberlain.
R.68108 Sgt. B. J. Dermody.
R.58108 Sgt. J. A. Foster.
R.76013 Sgt. M. R. Heinish.
R.74596 Sgt. T. D. Holden.
R.52648 Sgt. E. E. Nelson.
R.72419 Sgt. J. L. Ruthven.

Killed on Active Service

R.79699 Sgt. W. W. Hughes.
R.81021 Sgt. N. P. Julian.
R.77460 Sgt. R. P. Owen.
R.95372 Sgt. K. F. Peters.
R.74317 Sgt. P. R. Roach.

Previously Reported Missing Believed Killed on Active Service, Now Presumed Killed on Active Service

R.53808 Sgt. M. J. C. Craig.

Wounded or Injured on Active Service

C.1097 F/O R. E. Chandler.

Died of Wounds or Injuries Received on Active Service

R.79579 Sgt. L. D. Kippan.

ROYAL NEW ZEALAND AIR FORCE

Previously Reported Missing Believed Killed in Action, Now Presumed Killed in Action

NZ.403003 Sgt. H. C. McL. Haselden.

Previously Reported Missing, Now Presumed Killed in Action

NZ.401290 Sgt. C. H. Robson.

Wounded or Injured in Action

NZ.402470 P/O S. H. Gunning.

Missing Believed Killed in Action

NZ.404575 Sgt. D. L. Todd.

Missing

NZ.403312 Act. F/L E. G. Edmunds.
NZ.402891 Sgt. T. C. B. Patterson.
NZ.40666 Act. F/L I. W. Terry.

Killed on Active Service

NZ.411978 P/O S. A. Crump.
NZ.41898 P/O I. G. Grant.

SOUTH AFRICAN AIR FORCE

Killed in Action

102338 Air/Sgt. N. H. Petterson.
47300 Lt. J. A. Smith.

Missing Believed Killed in Action

103274 2nd Lt. M. C. Meadows.

Missing

47304 2nd Lt. J. McR. Barclay.
94433 2nd Lt. F. C. De-Meillon.
103115 2nd Lt. L. N. Evans.
94468 Air/Sgt. M. V. Fleming.
102470 Air/Sgt. S. R. Galloway.
102171 Air/Sgt. Greenburgh.
103254 2nd Lt. D. Harris.
103278 Lt. O. C. Hojem.
102524 Air/Sgt. A. Kahn.
48079 Lt. G. A. Marshall.
103602 2nd Lt. N. Sandilands.
102098 Lt. R. E. Stanford.
103093 Lt. L. A. Stone.
103252 Lt. W. L. Wood.

Royal Air Force Awards

HIS MAJESTY THE KING has approved the following awards for gallantry and devotion to duty during air operations:—

Distinguished Service Order

Flight Lieut. C. L. Roy—No. 150 Squadron.

Bar to the Distinguished Flying Cross

Act. Squadron Leader L. H. Day, D.F.C.—No. 38 Squadron.

Distinguished Flying Cross

Wing Commander B. K. Burnett, A.F.C.—No. 51 Squadron.
Squadron Leader R. G. M. Walker.
Act. Squadron Leader John Alexander, A.A.F.—No. 37 Squadron.
Act. Squadron Leader G. R. Colenso—No. 101 Squadron.
Act. Squadron Leader A. G. S. Cousens.
Act. Squadron Leader W. S. Hilary, D.F.M.—No. 76 Squadron.
Act. Squadron Leader M. T. Stephens, R.A.F.V.R.—No. 3 Group Training Flight.
Flight Lieut. R. J. Hardiman.—No. 208 Squadron.
Capt. O. G. Davies, S.A.A.F.—No. 12 Squadron.
Capt. S. P. Palmer, S.A.A.F.—No. 16 Squadron.
Capt. J. N. Robbs, S.A.A.F.—No. 12 Squadron.
Act. Flight Lieut. G. L. Campbell, R.A.F.V.R.—No. 272 Squadron.
Act. Flight Lieut. A. E. C. Derrett, R.A.F.V.R.—No. 150 Squadron.
Act. Flight Lieut. J. L. Groves—No. 112 Squadron.
Flying Officer K. E. Spence—No. 144 Squadron.
Flying Officer P. D. Thompson, R.A.F.V.R.—No. 185 Squadron.
Flying Officer W. L. Watson, R.A.F.V.R.—No. 148 Squadron.
Lieutenant A. R. Ingle, S.A.A.F.—No. 12 Squadron.
Act. Flying Officer C. E. Dingle (Canadian)—No. 144 Squadron.
Pilot Officer J. J. Allen, R.A.F.V.R.—No. 103 Squadron.
Pilot Officer Harold Baker—No. 144 Squadron.
Pilot Officer H. R. Blake, R.N.Z.A.F.—No. 150 Squadron.
Pilot Officer J. F. Craig, R.N.Z.A.F.—No. 144 Squadron.
Pilot Officer A. P. Dowse—No. 144 Squadron.
Pilot Officer Brian Goodale, R.A.F.V.R.—No. 51 Squadron.
Pilot Officer B. G. Hadland, R.A.F.V.R.—No. 106 Squadron.
Pilot Officer A. J. Heyworth, R.A.F.V.R.—No. 12 Squadron.
Pilot Officer I. D. N. Lawson, R.A.F.V.R.—No. 148 Squadron.
Pilot Officer Robert McFarlane, R.A.F.V.R.—No. 83 Squadron.
Pilot Officer A. V. Maslen, R.A.F.V.R.—No. 451 (R.A.A.F.) Squadron.
Pilot Officer H. E. Maudslay, R.A.F.V.R.—No. 44 (Rhodesia) Squadron.
Pilot Officer G. C. C. Palliser, R.A.F.V.R.—No. 249 Squadron.
Pilot Officer D. R. Taylor, R.A.F.V.R.—No. 44 (Rhodesia) Squadron.

Bar to the Distinguished Flying Medal

Flight Sergeant D. A. Hammatt, D.F.M.—No. 106 Squadron.
Flight Sergeant H. I. Popay, D.F.M.—No. 106 Squadron.

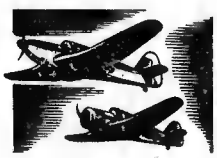
Milestones . . . 1937

". . . the first basic Trainer of the new era"

vide "Flight"

AS far back as 1935 the designers of Miles light monoplanes had foreseen the need of the R.A.F. for low-wing monoplane trainers to provide training on aeroplanes with similar characteristics to the operational aircraft of monoplane design. The first stage in the development of their theory was the adaptation of a Miles Hawk Major ■■ ■ primary trainer.

But by 1937 their plans were complete for an advanced trainer for pilots of aeroplanes in the Hurricane and Spitfire class. It embodied the Rolls-Royce Kestrel engine of 745 h.p. and appeared at the R.A.F. Hendon Display in that year. In the meantime the Magister, ■ natural development of the Hawk Trainer, was in production. This monoplane trainer was again accepted by the R.A.F., the Irish, New Zealand and Turkish Air Forces. It is in use at primary training schools in South Africa, Egypt, Latvia, Estonia, India, Australia, etc.



The acceptance of Miles Training Aircraft by the R.A.F. was an achievement that amply justified the designers' faith in their beliefs, when it is realised that the British Government's policy since 1922 was against wooden aircraft of any type.

All Miles Aircraft to date are of all-wood construction, even the now-famous Miles Master – fast advanced Monoplane Trainer for the Monoplane Pilots of the R.A.F.

Give generously to The Royal Air Force Benevolent Fund

Miles AIRCRAFT

CONSTRUCTED BY PHILLIPS ■ POWIS AIRCRAFT LIMITED SOMEWHERE IN ENGLAND

» MASTERS OF THE AIR «

(M4)

Distinguished Flying Medal

Flight Sergeant L. R. C. Gilbert—No. 76 Squadron.
Flight Sergeant S. H. Hipkin, S.A.A.F.—No. 12 Squadron.
Flight Sergeant J. G. Roberts, R.A.F.V.R.—No. 106 Squadron.
Temp. Flight Sergeant A. J. K. Moon—No. 44 (Rhodesia) Squadron.
Sergeant (now Pilot Officer) R. N. Allen, R.N.Z.A.F.—No. 75 (N.Z.) Squadron.
Sergeant J. G. Bruce—No. 105 Squadron.
Sergeant Alexander Cameron—No. 12 Squadron.
Sergeant W. H. Cappleman—No. 150 Squadron.
Sergeant Angus Caesar-Gordon—No. 144 Squadron.
Sergeant W. J. Dalton, R.A.F.V.R.—No. 70 Squadron.
Sergeant M. E. H. Dawson, R.A.F.V.R.—No. 76 Squadron.
Sergeant Frederick Denton—No. 76 Squadron.
Sergeant H. R. Edge—No. 150 Squadron.
Sergeant F. L. Fewkes, A.A.F.—No. 76 Squadron.
Sergeant D. S. Fisher, R.C.A.F.—No. 103 Squadron.
Sergeant A. H. Flett—No. 105 Squadron.
Sergeant C. S. George—No. 10 Squadron.
Sergeant L. W. Jones—No. 97 Squadron (since killed).
Sergeant G. F. Keen—No. 51 Squadron.
Sergeant E. R. Long, R.C.A.F.—No. 12 Squadron.
Sergeant P. R. McLaren—No. 51 Squadron.
Sergeant E. H. Mantle—No. 144 Squadron.
Sergeant Roy Martin—No. 203 Squadron.
Sergeant Alexander Morris—No. 144 Squadron.
Sergeant J. K. Napier—No. 51 Squadron.
Sergeant R. G. Purnell—No. 106 Squadron.
Sergeant Frederick Smith—No. 150 Squadron.
Sergeant F. A. Tricklebank—No. 38 Squadron.
Sergeant M. G. Turner, R.N.Z.A.F.—No. 103 Squadron.
Sergeant E. W. Wiseman, R.A.F.V.R.—No. 150 Squadron.
Air Sergeant Charles Jeffries, S.A.A.F.—No. 12 Squadron.
Air Sergeant P. H. Kleyn, S.A.A.F.—No. 12 Squadron.
Sergeant L. H. Mellor (Australian)—No. 37 Squadron.

George Medal

Corporal L. C. Bridgeman.

Extracts from the London Gazette

Air Ministry, January 20, 1942.

ROYAL AIR FORCE VOLUNTEER RESERVE

GENERAL DUTIES BRANCH.—To be Plt. Offs. on prob. (emergency).—Sgts.: Oct.: Dermot Bevan, L. J. Leppard, R. M. Walmsley, P. M. Wingfield, D. J. Downer, Wilfred Johnson, C. A. J. Smith, I. M. Barnes, G. W. Percival, R. C. Wescombe. Nov.: R. G. McL. Baggott, Angus Dalrymple, R. L. Bellamy, T. D. Brown, R. I. Crump, D. St. J. Jowitt, J. McA. McBride, S. M. P. Parkes, C. L. Barbezat, J. H. Woolley, L. C. E. De Vigne, W. L. H. Johnston, R. L. T. Robb, H. A. Cooper, F. J. Ruoff, H. A. M. Woodhatch, J. K. Keates, A. S. R. Mackenzie, E. A. Fielding, D. C. August, C. J. C. Bradshaw, C. H. J. Akers, G. E. Sheppard, R. P. Ellis, J. H. Tomkins-Russell, E. E. G. Youseman. Dec.: D. H. Greaves, G. B. Masters, P. A. Nash, T. C. Rigler, D.F.M., Stanley Trevallion, C. M. Tuffley, J. E. Van Schaick, J. P. Kelly, R. W. V. Jessett, A. H. Thom, G. M. Silvester, S. T. Underwood, A. E. Scull, S. J. Dongdon, A. G. Day, H. M. Fox, L. A. Smith, A. S. Barrie, E. J. D. Stanley, R. W. Bray, E. C. L. Hebblethwaite. Cpl.: Oct.: C. G. Stephenson. Ldg. Acm.: June: G. J. Speed, Oct.: P. H. T. Rogers. Nov.: G. B. Blunn, Hkun U Sao, N. MacD. Beyts. Dec.: E. J. Butchart, R. A. Freshwater, Eric Gittins, Jack Groome.

Plt. Off. (prob.) F. A. Drury is confirmed in his appt. Dec. 21.

Plt. Offs. (prob.) to be confirmed in their appts. and to be Flg. Offs. (war subs.):—Aug.: R. M. Lloyd. Sept.: J. H. Robinson. Nov.: F. H. Wallis (Sen. Oct. 29). Nov.: T. R. Cooke, J. I. Pengelly, P. Jack. Nov. 9 (Sen. Nov. 3), S. E. Hill. Dec.: D. F. A. M. Balfour, C. W. M. Powell, A. G. Robinson, A. F. Rowland, (Sen. Nov. 14) D. H. H. Gathercole, F. J. H. Pain. Dec.: (Sen. Dec. 3), W. H. Hughes, G. R. Stead, D. Wisdom, Dec. 8 (Sen. Nov. 23), N. W. Lee, Dec. ■ (Sen. Nov. 23). Dec.: (Sen. Dec. 3), R. A. Baseby, S. J. Beard, G. V. S. Crew, R. Seely-King, (Sen. Dec. 6), W. H. Bleby, B. E. P. Bone, E. D. C. Cooper, J. Cowman, D. H. C. Fry, G. W. Gilpin, J. E. F. Griffin, P. W. Helmore, A. O. S. Jepson, J. Plaistowe, P. Plumridge, A. W. Saunders, W. A. Thorne, P. L. Underwood, H. T. L. Smith (Sen. Nov. 24), J. S. Belton (Sen. Dec. 6). F. T. Clayton, G J. F. Jones (Sen. Dec. 4), E. C. Badcoe (Sen. Dec. 6). J. J. Hurley, J. G. Owen, R. M. Talbot, G. B. Windeler. (Sen. Dec. 1) L. A. P. Burra-Robinson, V. F. Funnell. K. H. Wallis, T. G. Westlake, L. F. Kelly (Sen. Dec. 3), J. M. J. Fryer (Sen. Dec. 4). (Sen. Dec. 15) T. F. B. Geary, F. P. Saunders, J. P. S. Slatter. (Sen. Dec. 22) W. H. R. Jones, S. W. Kellow, E. W. Kinchin, A. N. McClintock, K. McK. Murray, J. L. Norton, A. G. F. Oldworth, L. J. Porter. G. E. Poulton. Dec.: T. C. Hood, A. H. Gibb, J. Arnsby (Sen. Dec. 6). (Sen. Dec. 15) J. L. Briggs, P. W. Coggins. Jan.: S. Trout (Sen. Sept. 16). Jan.: (Sen. Dec. 29) J. B. G. King, D. B. Peace, J. E. Ramshaw, A. De Q. Walker, S. Le V. Wood. Jan.: C. T. Bassage (Sen. Dec. 18). Jan.: A. Da Costa, J. N. Culverwell (Sen. Dec. 26), B. A. Q. Wynyard-Wright Jan. 11 (Sen. Nov. 24), P. H. Shaw (Sen. Dec. 29), J. D. Keynes (Sen. Nov. 27), J. E. Bosley (Sen. Sept. 19).

Plt. Off. (prob.) H. A. Clinton is confirmed in his appt. Aug. 23, and to be Flg. Off. (war subs.). Sept. 23.

Plt. Off. (prob.) C. J. Myers is confirmed in his appt. July 19, and to be Flg. Off. (war subs.). Nov. 29.

Plt. Off. (prob.) E. M. Allies is confirmed in his appt. Aug. 6, and to be Flg. Off. (war subs.). Dec. 21.

Plt. Off. (prob.) G. S. E. Morris, D.F.C., is confirmed in his appt. July 20, and to be Flg. Off. (war subs.). Jan 13.

Flg. Offs. to be Flt. Lts. (war subs.):—Nov.: A. T. Gillard, C. G. D. Lancaster, D. F. O. Shelford, A. R. M. Geddes, H. T. Grubb, W. R. Houston, D. G. Johnson, G. G. Leeder, H. P. D Sykes, J. Hills, L. P. R. Hockey, L. Reavell-Carter. G. Rogerson. Dec.: R. D. Elliott, D.F.C., G. R. Green, J. Adair, D. S. Davies, W. C. A. Lodge, W. S. Thimblethorpe, I. C. Strutt, C. C. McCarthy-Jones. Jan.: E. A. Burbridge, W. M. Colby.

Flg. Off. F. W. Thompson is granted the rank of Flt. Lt. (war subs.). Nov. 19.

Plt. Offs. to be granted the rank of Flg. Off. (war subs.):—Oct.: F. A. Drury. Dec.: J. Buckley, D.F.C.

Plt. Off. R. Taylor is to transf. to the Admn. and Spec. Duties Br. Jan. 6.

Plt. Off. (prob.) K. Brown relinquishes his commn. on account of ill-health. Jan. 6.

Flg. Off. J. E. W. Marten resigns his comm. Dec. 31.

TECHNICAL BRANCH.—To be Act. Plt. Offs. on prob. (emergency):—Dec.: E. V. Jacobs, J. F. Dixon, D. U. James, J. G. Jones, J. L. Jones, A. C. McCulloch, E. H. Morgan, H. R. Morris, G. S. Pillans, J. F. Starr, G. B. Tait.

Plt. Off. (prob.) R. E. Salvesen is confirmed in his appt. Oct. 18, and to be Flg. Off. (war subs.). Jan. 9.

Plt. Off. (prob.) J. E. F. Walsha is confirmed in his appt. and to be Flg. Off. (war subs.). Nov. 15.

Plt. Off. (prob.) H. H. Few is confirmed in his appt. Dec. 13, and to be Flg. Off. (war subs.). Jan. 3.

Plt. Off. (prob.) R. E. Cæsar is confirmed in his appt. and to be Flg. Off. (war subs.). Sept. 8 (Sen. May 16).

Flg. Off. B. M. J. Davis is granted the rank of Flt. Lt. (war subs.). July 25.

Plt. Off. on prob. C. H. Targett is granted the rank of Flg. Off. on prob. (war subs.) May 7, and is confirmed in his appt. June 24. (Subs. for notifn. of July 18.)

Act. Plt. Offs. (prob.) to be Plt. Offs. (prob.):—Aug.: K. S. Goodyer, A. K. Mercer. Sept.: F. Hughes, G. St. G. Wheeler, E. C. C. White. Oct.: A. H. R. Taylor. Nov.: H. Ward, R. J. Pattinson.

The commn. of Act. Plt. Off. (prob.) L. P. Bradshaw is terminated. Jan. 10.

BALLOON BRANCH.—Plt. Offs. (prob.) to be confirmed in their appts. and to be Flg. Offs. (war subs.):—Sept.: R. C. Norton (Sen. Sept. 12). Nov.: W. Pritchard (Sen. Oct. 3). Nov.: A. G. Lamberth (Sen. Nov. 11). Dec.: H. A. Hammond (Sen. Dec. 13). J. D. O'Hagan. Jan.: F. C. Edmonds (Sen. Oct. 7).

Flg. Offs. to be transf. to the Admin. and Spec. Duties Br.:—Nov. 17: F. P. Badcock. Jan. 6: S. Jackson.

ADMINISTRATIVE AND SPECIAL DUTIES BRANCH.—To be Flg. Offs. on prob. (emergency):—Sept.: G. J. Scaramanga. Oct.: G. E. Winn. Wt. Off.: Nov. 14: Frederick Gibson (Sen. Nov. 1).

To be Plt. Offs. on prob. (emergency):—Dec.:: R. G. Agate, H. L. Bernstein, E. B. Hughes, Francis Molyneux, John Myers, A. T. L. Rimmer.

To be Act. Plt. Offs. on prob. (emergency):—Oct.: Allan Mason, P. G. Furnari, W. P. Whitfield, W. E. Brown, D. B. Murray, L. A. Westcott.

SWEPT FOR THE SWEEPER.—This snowy scene, photographed during the recent wintry weather, shows ■ Lockheed Hudson of Coastal Command taking off from ■ well-swept runway. Coastal Command pilots have won ■ high reputation for the regularity of their Atlantic and North Sea patrols in weather that would often have brought air line traffic to a standstill.

A FAIREY BATTLE TRAINER.

Nov.: J. P. Byrne, G. F. Clement, W. G. Lawler, N. R. B. Tebbitt, M. B. Whittingham, W. A. G. Price, Jack Tofte, M. E. E. Jones, G. F. Lambert, H. H. Williams, S. J. White, H. W. Wilson, A. E. Fox, Alan McDonald, C. E. Tooby, William Walker, E. F. Warburg, J. C. Beckham, M.C., M.M. Dec.: J. St. C. Garratt, T. J. Rogers, M. D. West, W. S. Marshall. Jan.: H. J. Rhynas. Wt. Off.:—Nov.: Richard Viccars (Sen. Sept. 25). Flt. Sgt.:—Dec.: J. F. Donald (Sen. Oct. 20). Sgts.:—Oct.: W. J. J. Shelton (Sen. Aug. 16). Nov.: A. P. Carter (Sen. Sept. 11), W. J. Denman (Sen. Sept. 16). Dec.: J. L. Pickard (Sen. Oct. 18). Cpls.:—Oct.: G. M. Hughes (Sen. Aug. 6). Nov.: F. A. A. Bussey (Sen. Sept. 16). Dec.: A. M. Readhead (Sen. Oct. 6), J. C. Jones (Sen. Oct. 13), A. G. H. Payne (Sen. Oct. 24). G. J. R. Hickmott (Sen. Oct. 17). Ldg. Acm.:—Oct.: J. S. Nichol, S. J. Fill (Sen. Aug. 27), Norman Scott (Sen. Aug. 2). Nov.: J. H. Potter (Sen. Sept. 17), H. W. Hingle (Sen. Sept. 22), M. G. E. Gillam (Sen. Oct. 8). Dec.: R. F. Sanders (Sen. Oct. 16). Dec.: (Sen. Oct. 21) H. P. M. Williamson, W. G. Mills. Acm. 1st Cl.:—Aug.: T. L. Bates (Sen. July 1). Nov.: J. W. Foley-Brickley (Sen. Aug. 7). Dec.: I. G. Wootton (Sen. Oct. 3), E. O. Roberts (Sen. Oct. 14). Acm. 2nd Cl.:—Oct.: S. S. Gordon (Sen. Aug. 26). Nov.: C. B. H. Giddy (Sen. Aug. 22). S. R. H. Cadier (Sen. Oct. 13), E. P. Rosser (Sen. Sept. 3), R. A. L. Gonet (Sen. Sept. 4), S. V. Berry (Sen. Aug. 26), W. A. Gambie (Sen. Sept. 12), Campbell Douglas (Sen. Sept. 16), H. R. Cocker (Sen. Sept. 18), E. V. Corbett (Sen. Sept. 22), A. J. Chandler (Sen. Sept 23), J. M. Eyles (Sen. Sept. 25). Dec.: E. H. Parsons (Sen. Oct. 3), James Russell (Sen. Oct. 10), James Ogden (Sen. Oct. 16), A. C. Hargreaves (Sen. Oct. 21), H. C. Cotterill (Sen. Oct. 22), A. H. Dunford (Sen. Oct. 23).

Flg. Offs. (prob.) to be confirmed in their appts.:—Oct.: G. V. Herd, R. J. La Fontaine, G. Hamilton, F. Hobson, G. H. Hamilton-Mack, I. A. Little, C. F. Ingle, P. T. Hammond. Dec.: A. Nevitt, M.C.

Plt. Offs. (prob.) to be confirmed in their appts. and to be Flg. Offs. (war subs.):—Oct.: J. F. R. Day, A. C. Greenwood, R. L. Gardner, A. F. Bell, W. D. Wisker, I. R. Wilson, B. Webb, E. D. P. Holmes-Leigh, R. A. Harrison. Nov.: E. A. McGeachy (Sen. Sept. 20), R. V. Quye, D. L. Walters, A. Bryer-Lloyd, B. L. Henderson, W. S. Thomas, G. C. Willis, F. D. S. Fitzmaurice, W. P. Spooner, M.C., McL. Strathern, C. J. Syred, E. H. Bodman (Sen. Oct. 14), E. J. Marx. Dec.: A. L. W. R. Henry, F. M. R. F. Sander, C. L. Ballantine, F. C. Bennett, D. R. Griffiths, H. C. B. Sutton, D. Caminer, H. D. Carter, C. S. J. Chapman, A. V. Day, J. F. Ellis, H. P. Gibson, G. Hackett, W. G. Hall, A. R. Harris, A. T. Hatton-Smooker, G. L. Horsburgh, T. H. Hutchison, R. J. Jackson, F. D. Kerr, R. Knight, D. Livingston, L. C. Marrow, C. E. Marshall, R. D. Rogers, G. A. E. Ruck, L. Stockton-Smith, C. W. Wilson, C. B. Wimbury, S. W. Yeomans, F. J. Harris, W. S. Abbott, C. B. Edwards, E. P. W. Robins, V. C. N. Wallich, T. G. Weedon, D. H. Ashby, W. J. Barnes, D'A. S. Beck, F. A. C. Burditt, M.C., W. C. Caswell, G. W. E. Doughty, S. G. Fidoe, W. R. Harper, C. L. Hewett, G. C. Hill, R. W. James, N. Lawson, J. R. W. Littlejohn, A. O. McIntyre, R. S. Silvester, A. R. R. Thomas, F. E. Thornton-Bassett, H. M. Ward, C. N. Woodbridge, S. J. Busby, E. A. Vaughan, (Sen. Sept. 9) C. H. Vaughan, S. J. Pringle, S. A. Worth, A. E. Crawford, H. L. Ellis, H. R. V. Harper, D. G. Jones, M. Q. Long, J. G. Chester, W. L. V. Harding, J. R. Aldiss, N. Beare, S. H. Davis, E. C. Davenport, D. A. Evans, J. R. Fagan, C. H. N. Fensom, P. V. Gale, H. Goodhart, A. D. S. Gordon, W. B. G. Henderson, G. W. Hickson, J. L. W. Hodgson, A. G. R. Jenkins, S. A. Oldham, V. Patman, P. J. J. Savary, H. T. LeF. Shepherd, G. L. H. Stein, F. Versen, J. T. B. Brader, H. Jackson, S. B. Nicholson, H. Webb. Jan.: R. Taylor (Sen. July 28).

Flt. Lts. to be Sqn. Ldrs. (temp.):—Dec.: D. H. Montgomery, B. G. M. Nixon.

Flg. Off. R. S. Mathieson to be Flt. Lt. (temp.). Dec. 1.

Plt. Off. (prob.) B. C. W. Stanley is granted the rank of Flg. Off. on prob. (war subs.) May 21, and is confirmed in his appt. July 2. (Sub. for notifn. of Oct. 21.)

Act. Plt. Offs. (prob.) to be Plt. Offs. (prob.):—Sept.: L. R. N. F. J. Roig. Dec.: G. P. Adderley, A. Edmonds, G. T. Lipscombe, D. Pepper, J. D. G. Clayton, L. A. M. Rushton, D. G. Smith, E. Withy, L. H. Fairbrother, G. C. Sharpe, E. W. Watson. Jan.: R. Burton, A. N. Carruthers, A. L. Coulson, G. A. E. Craig, G. W. Crossley, R. J. Dyer, C. M. T. Elliott, J. Hancell, W. J. Hayward, H. F. Howcroft, G. W. G. Kennard, J. E. King, J. S. Mitchell, A. D. Murfin, A. P. Terry, J. F. Anderson, W. D. Armstrong, A. D. K. Baker, J. T. Baldry, T. S. Bamber, E. J. M. Barker, F. Barlow, A. J. K. Barnes, T. Barnett, A. Bird, S. Birkett, T. N. Blackmore, J. D. Blakeley, N. Boddington, G. Brand, E. A. Brodie, C. E Browne, A. Bullock, S. G. Bunnell, W. G. Bushill-Matthews, A. H. Butler, H. C. L. Challis, R. C. Chatfield, B. M. Chilver, C. L. Collings, R. G. Conisbee, C. S. Cooper, L. R Cooper, T. A. B. Cooper, H. W. Coxon, J. Cullens, M. Cushen, S. Davies, S. C. Davies, F. E. F. Doubleway, H. W. Eldred, R. E. Etches, H. D. Evans, W. B. Fitzpatrick, T. B. M. Flack, W. H. Fone, G. J. R. Francis, H. Francis, H. H. Gardner, R. P. Garnett, L. Gibbs, N. W. Gillett, K. H. Gilman, J. P. Goodbody, G. J. Gore, G. Greensmith, E. Greenwood, H. J. A. Hankins, A. J. Harrhy, J. A. Hatfield, L. F. Heighway, J. A. Herron, J. B. Higham, G. H. Hindry, N. Hirst, F. G. Hiscock, E. S. Hoare, F. A. Holmes, B. F. Hughes, E. B. Hughes, R. Hurcombe, J. Hutcheson, T. W. Jones, W. R. Jones, H. L. Karby, W. M. Keogh, A. Kerr, G. Kilpatrick, H. C. Leaver, H. W. Lees, N. Lees, P. H. Lemon, J. H. Long, J. A. Lupton, J. McGregor, S. W. McInnes, G. M. Mackintosh, J. K. Mactaggart, C. A. Malcolmson, R. Manvell, G. F. Marsland, F. O. Martin, H. B. Martin, G. G. Maxwell, J. A. Midgley, J. N. Millar, D. W. Miller, C. I. Millward, F. G. Moorsom, R. C. Morris, A. Murray, P. E. Nash, K. W. Nichols, J. C. Nicholson, R. L. Norris, A. H. W. Oliver, F. W. Orchard, E. A. G. N. B. Orr, P. A. H. Oswin, E. W. Packman, R. de L. Penny, G. A. Pope, A Potts, J. L. A. Pratt, E. L. Preston, J. Prideaux, F. Purnell, S. E. Raspin, T. Reader, F. A. Reynolds, S. J. P. Rock, C. A. Rodgers, D. G. Roiph, G. F. Simpson H. D. Snell, C. G. Snook, A. J. Stevens, R. G. Stewart, N. W. H. Stock, A. R. Stone, H. G. E. Sturges, T. R. Summers, A. H. Taylor, J. S. Taylor, C. B. Walker, L. J. Wall, M. J. Ward, L. Welch, H. G. Weston, D. B. Wheeler, F. Wheeler, T. G. Wilkie, R. R. Wilkinson, R. W. Winter, R. R. Kendall, C. McNutt, R. H. B. Pellew, L. R. R. Shepherd, M. B. Nettleton, J. R. Duncan, R. A. Gillanders, G. A. Harrison, R. N. Lane, T. A. H. Medlycott, R. I. M. Miller, H. P. Rendle, A. L. Sockett, H. W. B. Akester, E. A. Airriess, H. J. Barnes.

Plt. Off. (prob.) W. G. Watson is transf. to the Gen. Duties Br. Sept. 18.

To be transf. to the Balloon Br.:—Jan. 9, 1942: Sqn. Ldr. W. A. Dunn, Sqn. Ldr. F. C. Hornsby-Smith, Sqn. Ldr. M. V. Moloney, Flt. Lt. J. F. Higgins, Flt. Lt. L. Vinton, Flg. Off. F. A. Blackmon.

Flg. Off. E. H. L. Hadwen relinquishes his commn. on account of ill-health and retains his rank. Jan. 8.

Plt. Off. (prob.) J. R. Workman relinquishes his commn. on account of ill-health. Jan. 9.

Flt. Lt. A. R. Tooke resigns his commn. and retains the rank of Sqn. Ldr. Dec. 1.

Plt. Off. (prob.) A. N. W. Pye resigns his commn. Jan. 7, 1942.

The commns. of the following Plt. Offs. (prob.) are terminated:—Jan.: V. P. Noonan, E. M. Patterson.

The notifn. of Nov. 25 concern. Plt. Off. K. E. Charlwood is cancelled.

TRAINING BRANCH.—The folg. Act. Plt. Offs. (prob.) resign their commns.:—Jan. 2: D. B. Hair, L. G. Heath.

AMENDMENTS.—The amending notifn. of Dec. 30 concern. Act. Plt. Off (prob.) W. J. Davies is cancelled.

In notifn. of May 9, concern. Act. Plt. Off. (prob.) W. J. Davies for Mar. 22 read Feb. 1.

EQUIPMENT BRANCH.—Flg. Off. J. S. Martin is transf. to the Gen. Duties Br. Nov. 22.

Plt. Off. (prob.) B. D. Maisel relinquishes his commn. on account of ill-health and retains the rank of Flg. Off. Jan. 9.

ACCOUNTANT BRANCH.—Plt. Off. (prob.) K. F. James is confirmed in his appt. Aug. 10, and to be Flg. Off. (war subs.) Sept 21.

Plt. Offs. (prob.) to be confirmed in their appts. Oct. 12, and to be Flg. Offs. (war subs.) Nov. 21:—W. H. G. Dearnley, F. G. Hawkes, L. A. Wigzell.

Plt. Off. (prob.) W. F. L. James is confirmed in his appt. Nov. 2, and to be Flg. Off. (war subs.) Dec. 14.

Flg. Off. J. S. Doughty to be Flt. Lt. (temp.). Dec. 1.

Plt. Off. (prob.) W. R. Saunders to be Flg. Off. (prob.) (war subs.) Dec. 1.

Act. Plt. Offs. (prob.) to be Plt. Offs. (prob.). Dec. 6: E. W. Heath, D. E. J. Andrews, W. H. Avery, W. T. Bristow, D. L. Brooks, R. H. Brown, B. W. L. Buckland, E. J. Carter, W. J. Chamberlain, E. F. Cleary, J. R. Collier, T. C. Constable, L. J. F. Cooper, N. C. Cornish, B. E. Crane, J. W. H. Curtis, W. Davies, G. J. Earl, E. S. Ellerbeck, R. J. Emerson, G. W. Fairgreve, D. L. Fenton, J. A. Fletcher, D. F. Fluke, L. W. Foott, C. Green, H. C. Hagger, E. L. Hartley, S. J. C. Jones, T. A. Knowles, A. C. Lucas, H. Morley, C. H. Phillips, H. C. Rea, C. E. Ricketts, R. L. Sanbrook, A. Stone, G. D. Symington, W. H. Vaughan, C. W. Webb, H. Woods, P. W. G. G. Woof, R. H. Denbigh, A. J. W. Barker, S. G. H Randall, C. K. J. Radcliffe, E. C. Fearns, R. C. Biddle, N. Bronkhurst.

The commn. of Act. Plt. Off. (prob.) J. W. Hume is terminated. Jan. 6.

MEDICAL BRANCH.—Flg. Offs. to be Flt. Lts. (war subs.):—Oct.: A. L. Watson, B.M., Ch.B. Nov.: H. Kenyon, M.B. Ch.B.; W. P. Weir, M.B., Ch.B.; W. G. Smeaton, M.B., Ch.B., D.P.H. Dec.: S. Gnessen, M.R.C.S., L.R.C.P.; R. N. Stansfield, M.R.C.S., L.R.C.P.; H O Hughes, M.R.C.S., L.R.C.P.; R. K. McElderry, M.B., B.Ch.; A. G. Spencer, M.R.C.S., L.R.C.P.; G. A. Ewen, M.R.C.S., L.R.C.P.

DENTAL BRANCH.—Flg. Offs. to Flt. Lts. (war subs.).—Sept.: E. G. C. Hunter, L.D.S. Dec.: G. Calvert, L.D.S.; G. Fleming, L.D.S.; J. H. Flitcroft, L.D.S.; I. Lipington, L.D.S.; W. D Aitken, L.D.S.; F. A. Clements, L.D.S.; W. E. Howitt, L.D.S.; S. K. Arnold, L.D.S.; W. A. Steiner, B.D.S.; G. W. Sutherland, L.D.S.; B. D. Clark, L.D.S.

CHAPLAINS BRANCH.—The Rev. A. R. Shillinglaw relinquishes his commn. on account of ill-health. Jan. 9.

AUXILIARY AIR FORCE

GENERAL DUTIES BRANCH.—Flt. Lt. J. Alexander to be Sqd. Ldr. (temp.). Dec. 1. (Sub. for notifn. of Dec. 23.)

Flg. Offs. to be Flt. Lts. (war subs.).—Dec.: W. A. Douglas, G. H. E. Welford, M. J. Appleby, D. M. Crook, D.F.C., J. K. U. B. McGrath, D.F.C., F. E. Clark.

BALLOON BRANCH.—Flt. Lt. R. A. Cooksey is transf. to the Admin. and Spec. Duties Br. Aug. 1.

ADMINISTRATIVE AND SPECIAL DUTIES BRANCH.—Flg. Off. B. H. Penfold is transf. to the Balloon Br. Jan 7.

EQUIPMENT BRANCH.—Plt. Off. A. J. Phillips is granted the rank of Flg. Off. (war subs.). May 3, 1940. (Sub. for notifn. of Mar. 14, 1941.)

WOMEN'S AUXILIARY AIR FORCE

To be Asst. Sec. Offs. on prob. (emergency).—Dec.: E. C. Andrews, Sheila Babot, W. M. Bartindale, D. M. Bevington, L. M. E. Black, J. M. Boyce, C. F. Brooke-Rose, T. H. Daniels, Marion Edwards, K. R. Gowing, H. C. Hawkins, Valerie Hesford, E. H. Hinchcliff, M. E. Hulme, Constance Humphrys, Phœbe Jay, V. V. Jeff, M. E. Johns, B. L. Lankshear, F. M. Law, D. M. Lax, J. K. Moorhead, B. G. Neville, A. M. Osmond, A. M. Palmer, N. W. Ross, H. M. Scriven, L. M. Sieveking, Muriel Sinclair, Dorothey Tennet-Suttill, W. M. Thompson, E. A. Thorp, D. M. Turner, R. V. Willcox, P. L. Willis, J. M. Youle. Jan., 1942: A. R E M. des A. Dalton, M. R. Falkner, Winifred Virtue.

Asst. Sec. Off. C. G. Underhill relinquishes her commn. on account of ill-health. Jan. 18, 1942.

The following resign their commns.:—

Sec. Off. The Hon. O. Murray-Smith. Dec. 23.

Asst. Sec. Off. A. Clark. Dec. 24.

Asst. Sec. Off. J. M. Challenger. Jan. 5, 1942.

Air Ministry, January 27, 1942.

ROYAL AIR FORCE

GENERAL DUTIES BRANCH.—To be Plt. Offs. on prob. (emergency):—Temp. Flt. Sgts.: Oct.: C. E. Moss. Dec.: Charles Shaw. Sgts.: Sept.: S. A. Sharpe. Oct.: R. C. Barlow. David Evans. Nov.: John Niblett. Cpl.: A. T. Yeo.

Flg. Off. (prob.) M. M. Wallenstein is confirmed in his appt. Oct.

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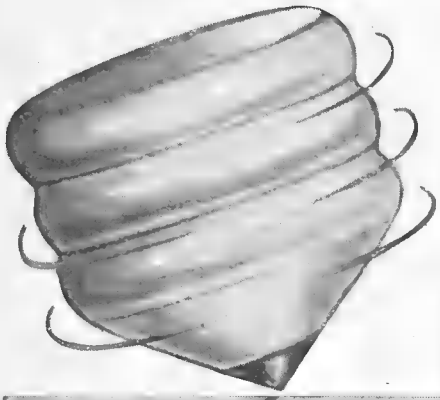

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CVS—487

Plt. Offs. (prob.) to be confirmed in their appts. and to be Flg. Offs. (war subs.):—June: J. N. Owen (Sen. May 2) (Subs. for notifn. of July 18). Oct.: T. J. Watkins. D.S.O. (Sen. May 16). J. D. W. Willis (Sen. Oct. 18). Dec.: R. R. Presland, D.F.C. (Sen. Dec. 11). Jan.: R. W. P. McFarland, D.F.M., D. W. Mansbridge (Sen. Jan. 1) L. Yeoman. D.F.M. (Sen. Dec. 11). W. T. Gray, D.F.M. (Sen. Dec. 18).

Air Cdres. to be Air Vice-Mshls. (temp.). Dec.: H. V. Champion de Crespigny, M.C., D.F.C. (Act. Air Vice-Mshl. J. M. Robb, C.B., D.S.O., D.F.C., A.F.C. (Act. Air Vice-Mshl.), J. J. Breen, O.B.E., G. C. Pirie, C.B.E., M.C., D.F.C. (Act. Air Vice-Mshl.), R. H. M. S. Saundby, M.C., D.F.C., A.F.C. (Act. Air Vice-Mshl.), D. F. Stevenson, C.B.E., D.S.O., M.C. (Act. Air Vice-Mshl.), Hon. R. A. Cochrane, C.B.E., A.F.C., W. A. Coryton, C.B., M.V.O., D.F.C.

Gp. Capts. to be Air Cdres. (temp.). Dec.: L. O. Brown, C.B.E., D.S.C., A.F.C., C. E. V. Porter, R. A. George, M.C., P. H. Mackworth, D.F.C., W. Elliot, C.B.E., D.F.C., J. W. Baker, M.C., D.F.C.

Flt. Lts. to be Sqn. Ldrs. (temp.). Dec.: J. H. Lapsley, D.F.C., J. M. Bodman.

Flg. Offs. to be Flt. Lts. (war subs.):—Sept.: A. R. Dunn. Oct.: J. H. L. Blount, D.F.C., A. G. Douglas. Nov.: G. M. Baird, F. B. Bassett, D. L. Bisgood, M. B. Mallet, E. J. Durston, T. B. A. Sherrington, J. G. Hughes. Dec.: R. C. J. Waters, H. M. Jones, E. C. Lane-Sansam, D.F.C., F. W. Gilmore, G. H. Russell, D.F.C., D. T. M. Lumsden, J. M. MacDonald, A. E. P. Pim, R. W. Pye, D. C. Sharman, R. Veal, J. M. V. Carpenter, N. H. J. Smith, D.F.C., D. W. A. Stones, D.F.C.

Plt. Offs. to be Flg. Offs. (war subs.):—Sept.: D. G. T. Hayes (Sen. May 9). Oct.: C. D. C. Dunford-Wood (Lt. 13th F.F. Rif. I.A.), G. A. Haig (Lt. (Temp. Capt.) 19th Hyderabad R.-I.A.). Nov.: A. P. L. Barber (2nd Lt. R.A. T.A.). Dec.: G. L. Huntley (2nd Lt. R.E. T.A.), C. D. North-Lewis (2nd Lt. K.R.R.C. T.A.).

Air Cdre. G. R. Bromet, C.B.E., D.S.O., to be Act. Air Vice-Mshl. Dec. 12.

TECHNICAL BRANCH.—To be Flg. Offs. on prob. (emergency):—Wt. Offs.: Sept.: A. L. Arrow (Sen. Jan. 9). Oct.: C. F. Cracknell (Sen. July 2). Nov.: T. H. Brooks (Sen. June 24), T. G. W. Young (Sen. June 26), H. W. L. Cherry (Sen. July 16), G. H. Etheredge (Sen. Aug. 5).

To be Plt. Offs. on prob. (emergency):—Wt. Offs.: Sept.: W. A. Leslie (Sen. May 26). Oct.: F. A. Badley (Sen. Apr. 24), William Dixon (Sen. Oct. 7). Nov.: C. E. G. Tomkins (Sen. Oct. 9, W. W. Sharp (Sen. Sept. 11), L. H. Fenn (Sen. Sept. 29), C. W. Allsop (Sen. Oct. 9), Colonel William Cornforth (Sen. Oct. 28), C. H. Burchett (Sen. Oct. 27). Act. Wt. Off.: Nov.: B. F. C. Lynes (Sen. July 10).

Gp. Capts. to be Air Cdres. (temp.). Dec.: C. Turner, A.F.C., C. B. Cooke, C.B.E., E. J. Cuckney, D.S.C., H. J. Roach, O.B.E., A.F.C., D. F. Lucking, G. A. H. Pidcock.

Flg. Off. C. F. Howard is granted the rank of Flt. Lt. (war subs.). July 5.

Act. Plt. Offs. (prob.) to be Plt. Offs. (prob.):—July: I. Roberts. Aug.: R. N. Wells, A. C. C. Webber. Oct.: A. G. Waterhouse.

ADMINISTRATIVE AND SPECIAL DUTIES BRANCH.—To be Flg. Offs. on prob. (emergency):—Wt. Offs.: Nov.: P. H. Arrowsmith (Sen. July 28), W. H. Angus (Sen. Aug. 5).

To be Plt. Offs. on prob. (emergency):—Wt. Offs.: Mar.: F. J. Thompson (Sen. Jan. 27). Nov.: Gilbert McKendrick, M.M. (Sen. July 24). Nov.: J. M. Hewitt (Sen. Oct. 2).

To be Act. Plt. Offs. on prob. (emergency):—Wt. Offs.: Nov.: William Cope (Sen. Sept. 10), J. F. Larman (Sen. Sept. 25), J. G. McKeown (Sen. Sept. 25). Flt. Sgt.: Oct.: A. W. Rogerson (Sen. July 3).

Plt. Offs. (prob.) to be confirmed in their appts and to be Flg. Offs. (war subs.):—Sept.: A. McP Cameron (Sen. Apr. 25), G. C. R. Ackrill (Sen. Apr. 25).

Flg. Off. F. Garrod is granted the rank of Flt. Lt. (war subs.). July.

Act. Plt. Offs. (prob.) to be Plt. Offs. (prob.):—Dec.: H. L. Atkin. Jan.: A. R. Walker, J. C. Evans, A. McNally, W. A. Googe, J. P. Angold, R. L. Brace-Hall.

EQUIPMENT BRANCH.—Plt. Off. (prob.) A. Wilson is confirmed in his appt. Sept. and to be Flg. Off. (war subs.) Nov.

Act. Plt. Offs. (prob.) to be Plt. Offs. (prob.):—July: R. Gorddard. Oct.: V. E. Darley.

Sqn. Ldr. P. H. Wilcox is dismissed the Service by sentence of General Court-Martial. Dec.

The notifn. of Dec. 2 concern. E. P. S. Ogburn is cancelled.

AMENDMENT.—In notifn. of Nov. 11 concern. Flg. Off. D. S. Urquhart for D. S. read D. C.

ACCOUNTANT BRANCH.—The folg. are confirmed in their appts.:—Flt. Lt. (prob.): July: E. T. Pratt. Flg. Offs. (prob.): July: M. J. Toby. Aug.: D. B. Flux.

Plt. Off. (prob.) J. W. H. Dailly is confirmed in his appt. Nov. and to be Flg. Off. (war subs.) Dec.

MEDICAL BRANCH.—Gp. Capt. T. J. Kelly, M.C., M.D., Ch.B., to be Air Cdre. (temp.). Dec. 1.

RESERVE OF AIR FORCE OFFICERS

GENERAL DUTIES BRANCH.—C. F. Burden to be Sqdn. Ldr. in Class CC. June 13, 1940.

To be Flt. Lts. in class CC:—Dec., 1940: Wilfred Johnson. Dec.: M. A. Alden, John Beard, J. W. H. Bishop, Thomas McGrath.

To be Flg. Offs. in class CC:—Dec.: A. N. Buell, E. S. Coristine, John Dawley, E. P. Dunford, R. R. Greenfield, G. A. Lynn, D. R. Valentine.

To be Plt. Offs. in class CC.:—Dec.: F. S. Lamplough, E. G. Mitchell, R. G. Smith, E. J Thompson.

Flt. Lt. H. C. Daish to be Sqn. Ldr. (temp.) Dec.

ADMINISTRATIVE AND SPECIAL DUTIES BRANCH.—Flt. Lt. H. W. B. Hansford is transf. to the Gen. Duties Br. Nov. 22.

ROYAL AIR FORCE VOLUNTEER RESERVE

GENERAL DUTIES BRANCH.—To be Plt. Offs. on prob. (emergency):—Oct.: C. V. Boyle, G. H. C. Emmet. Nov.: H. H. Whitfield. Temp. Flt. Sgts.: Oct.: P. D. J. Moren, D.F.M. Nov.: S. A. D. Langston (Sen. July 5). Sgts.: Feb.: Frank Taylor. July: N. J. Barnes, G. B. Callaghan, E. G. Catton, E. J. Lever, H. J. T. Sheldon. Aug.: A. H. Tomlin, R. T. Merrifield, J. B. R. Petrie, E. G. Eves, T. B. Oddie, D. McI. Wood. Sept.: L. P. Bales, Richard Stringfellow, T. A. H. Slack, K. W. Jones, R. D. Fairley, G. A. Lean, E. A. Rockliffe, Simon Rowan, T. E. Errington, M. J. Griffiths, K. C. Killoran, H. J. King, R. H. Lunney, C. L. Selman, J. G. Spiby, E. A. Wood. Oct.: J. C. Hutson, R. A. M. Muir, C. H. Norton, W. R. Stock, E. W. Swatton, A. V. Rix, C. L. Gotch, C. P. Melly, C. E. O'Neill, J. W. E. Holmes, J. N. Catty, P. H. N. Lambert, J. A. Bush, E. G. Mather, J. V. Riley, N. C. Taylor, Ronald Watson, Norman Wolfenden. Nov.: D. R. P. Booth, J. G. Clark, G. I. Clay, W. R. Y. Gillfoyle, D. A. Hine, Francis Leach, J. K. Mann, Edwin Thomson, Leonard Cheek, K. O. Giddings, J. R. Saunders, J. A. Tooth, S. H. Gough, J. H. Farrad, D. G. Hunter-Blair, H. F. Johnson, J. K. A. Pickering, A. E. Shackleton, J. C. R. Waterhouse, A. E. Foster, A. L. Foster, S. B. H. Harrison, V. C. Lewis, John Brown, J. F. Irvine, Edward Speller. Dec.: M. A. Brogan, A. V. Brooks, J. P. Winfield, D. S. Gregory. Jan.: A. C. Wanlin. Ldg. Acm.: June: F. J. Stratton. Nov.: R. E. Gibbons, M. A. McGilligan, Edwyn Tonge, D. E. C. Coleman, K. A. Russell, J. F. Grime, J. R. Brice, R. J. Gee, David Hirst, K. C. Royle. Dec.: F. C. Hammond, R. P. Harding, R. D. Hill, G. J. Kemp, H. G. Kreye, A. J. Penman, A. R. Pitt, E. R. Wardley, C. K. L. Bryson, J. S. Dicker, D. S. Knights, J. A. Williams, E. A. C. Young, R. G. Allen, J. C. E. Atkins, G. R. Christopherson, L. S. Frost, M. R. Hickman, J. D. R. Shaw. Acm. 2nd Cl.: Nov.: R. P. Barlow, Deiniol Davies.

Flg. Off. (prob.) N. S. L. Stent to be confirmed in his appt. Jan.

Plt. Offs. (prob.) to be confirmed in their appts. and to be Flg. Offs. (war subs.):—Aug.: A. L. Winskill (Sen. Aug. 15). Oct.: H. Heaton, J. E. Makgill, C. E. S. Patterson, D.F.C. Nov.: H. H. Siddell (Sen. Nov. 2), D. Milne (Sen. Nov. 9), L. H. Ridgeway (Sen. Nov. 14), P. P. Godfrey (Sen. Nov. 19), P. C. Campbell (Sen. Nov. 5). Dec.: D. F. Peel, A. J. Picknett, J. H. Chase (Sen. Nov. 19), J. M. Donald, H. P. Lavender, D. J. R. Gee (Sen. Nov. 24), E. A. Allison (Sen. Dec. 6), A. S. Baker, M. S. P. Houdret, J. F. Bristow, G. E. Dunfee (Sen. Dec. 6), H. E. Tappin (Sen. Nov. 27), A. J. Andrews, D. A. Barnham, H. L. C. Woolley (Sen. Dec. 15), B. F. Perkins (Sen. Dec. 22), F. R. Passmore, R. West (Sen. Dec. 3). Jan.: R. A. Hagger (Sen. Dec. 15), J. P. Geoghegan, E. Garside (Sen. Dec. 18), A. G. S. Anderson (Sen. Jan. 9), M. V. Christopherson.

Plt. Off. (prob.) C. P. L. Streatfeild is confirmed in his appt., Mar., and to be Flg. Off. (war. subs.). Sept.

Plt. Off. (prob.) G. C. Burnhide is confirmed in his appt., Feb., and to be Flg. Off. (war subs.). Dec.

Plt. Off. (prob.) H. V. C. Webb is confirmed in his appt., June, and to be Flg. Off. (war subs.). Dec.

Plt. Off. (prob.) T. V. Welsh is confirmed in his appt., July, and to be Flg. Off. (war subs.). Dec.

Flg. Offs. to be Flt. Lts. (war subs.):—Oct.: H. S. Lusk. Dec.: R. Berry, D.F.C., C. M. Gamon, P. L. Keeble.

Plt. Off. (prob.) E. J. Newton is transf. to the Admin. and Spec. Duties Br. Jan. 1.

TECHNICAL BRANCH.—To be Act. Plt. Offs. on prob. (emergency):—Nov.: N. T. Woombs. Dec.: K. H. Courtney, R. P. Banks, Cecil Bellis, F. A. L. Beynon, Anatol Blankov, B. B. Bleech, G. L. Cardy, F. H. Chandler, K. B. Cook, Ernest Cox, N. F. Dickinson, R. W. Edwards, A. W. Eyre, L. G. Fry, David Henderson, P. J. Howard, H. V. Howell, Kenneth Huxley, Allen Jackson, C. L. James, P. D. Jenkins. Act. Wt. Off.: Nov.: George Toft (Sen. Oct. 28). Flt. Sgt.: Oct.: I. D. McK. Drummond (Sen. June 19). Cpls.: Oct.: Frank Hill (Sen. Sept. 11). Nov.: D. F. Egan (Sen. Oct. 9). Acm. 1st Cl.: Nov.: Allan Eslick (Sen. Oct. 9).

Act. Plt. Offs. (prob.) to be Plt. Offs. (prob.):—Aug.: C. T. Dermott. Sept.: D. J. Bowen.

Act. Plt. Off. (prob.) W. J. Farmerey is transf. to the Admin. and Spec. Duties Br. Jan. 1.

Plt. Off. (prob.) J. Morgan is removed from the R.A.F.V.R. Nov. 25.

AMENDMENTS.—In notifn. of Dec. 23, for W. D. Jacks read E. Jacks.

In notifn. of Jan. 13, for F. A. Clarke read F. C. Clarke.

BALLOON BRANCH.—Plt. Offs. (prob. to be confirmed in their appts. and to be Flg. Offs. (war subs.):—Dec.: W. T. Lutener (Sen. Nov. 11), C. W. Beddows, F. Fowler (Sen. Nov. 22), C. Openshaw (Sen. Nov. 25), H. H. Turner (Sen. Oct. 7).

Act. Plt. Offs. (prob.) to be Plt. Offs. (prob.):—Dec.: H. Gardener, C. Remington, G. B. Morrison, A. D. Du Heume, L. S. Turner, J. Cattanach, J. R. Anderson.

ADMINISTRATIVE AND SPECIAL DUTIES BRANCH.—N. E. Browning to be Flg. Off. (emergency). Aug.

To be Act. Plt. Offs. on prob. (emergency):—Oct.: C. A. Hooper, B. T. Parkin. Nov.: F. C. Richbell, Arthur Simpson, J. M. Carter. Dec.: F. C. H. Custance, W. J. E. Bendall, L. E. Farrow, E. B. Fawcett, R. S. Fitzsimmons, C. M. French, D. W. Grant, N. T. O. Greig, E. P. Griffin, F. W. Groves, Harry Hall, H. J. Hoare, W. C. Hockin, T. N. Housecroft, H. V. Howells, L. N. Hughes, W. T. H. Hunt, B. S. Hussey, C. R. Hyde, L. J. Ireland, L. R. James, G. L. Jeffery, F. L. B. Johnson, C. W. Jones, J. M. Jones, P. R. Jones, W. H. O. Jones, H. W. J. Kershaw, A. D. H. Leach, H. D. Leyshon, H. J. Long, J. S. Lowrie, J. A. Macdonald, D. H. MacGillivray, J. F. Mahony, N. A. Malcolm, A. L. Manger, A. T. Manning, C. G. Martin, Alexander McCallum, P. H. T. Merry, R. O. S. Milde, D. C. Miller, R. C. Mills, Frank Mitchell, J. W. Needham, J. R. Neild, J. A. W. Newman, A. P. Newton, H. C. Norcott, W. F. Norman, N. E. Nuttall, A. D. Ogilvy, A. W. A. Oliver, D. G. Owen, J. McK. Parlane, Harry Parsons, L. W. Pepperday, C. M. Plank, H. H. Polatch, John Pringle, S. H. Putnam, Fred Rawlinson, O. W. E. Raymond, R. H. Roberts, C. G. Rogers, T. H. Rook, Charles Rowe, J. F. Ruch, H. V. Scott, S. A. Scott, W. C. Scurlock, C. G. Shuff, W. P. Smith, B. H. Spragg, L. C. Taylor, D. L. Thomas, S. E. Thorn, A. G. Tulloch, R. A. H. Turing, H. T. MacM. Twyford, J. F. Valentine, Ronald Wane, T. C. Whatley, W. H. White, M. C. Wiggins, S. C. Wilford, G. I. Williamson, W. J. Willsher, R. P. Wilson, W. F. Adam, S. W. Addison, J. U. Adkins, R. H. Amor, A. C. Ashton, A. O. D. C. Barfield, J. R. Barnes, W. M. Blake, A. G. Blower, M. B. Bradshaw, D. H. Brain, G. T. Brand, L. E. Brewer, J. L. Brill, R. J. Brooks, F. P. Brotherton, W. A. Brown, H. G. Browne, J. H. Buick, F. A. Bush, D. McL. Cameron, A. G. Calton, L. F. Canham, F. W. Chandler, F. W. Checkley, A. H. Christy, F. H. Cleaver, P. L. Clifton, J. H. B. Clover, J. L. Collins, G. W. Cornock, G. C. Darlaston, L. S. Diamond, Royton Dunsford, J. S. Farr, R. D. Forster, Stanley Gilfoyle, P. E. Goldin, Henry Gowan, S. G. Greengrass, P. E. Griffiths, F. E. Hall, Samuel Harrison, S. M. Harris, O. B. Henderson, C. G. Hill, R. R. Hobbs, J. L. Horrocks, J. S. Houghton, Robert Howatson, F. S. Ion, A. E. Kent, Michael Kougoulsky-Forter, C. M. Lawler-Wilson, P. H. Macdowell, G. P. Maitland, S. F. Manning, C. E. F. Marsh, C. G. Maslin, D. W. Maxey, F. H. R. McIntosh, I. I. McLennan, J. M. A. McPhail, H. G. Mellors, C. G. Moeller, William Norman, A. F. Pape, R. G. Pearce, G. M. Peploe, E. C. Peters, R. J. Philips, A. E. Powell, C. McA. Proudfoot, Ralph Radford, A. G. Rhodes, Frank Richards, the Duke of Richmond and Gordon, R. R. Rudland, Stanley Russell, O. H. Rigold, J. W. de F. Rawle, Thomas Sadler, W. Y. P. Scott, Michael Shneerson, D. L. Showan, R. A. Slann, T. J. Smith, B. R. R. Snape, G. H. Spicer, C. H. Stephenson, L. W. Stevens, James Stevenson, J. F. Stott, Alexander Struthers, Norman Stubbs, C. J. Taylor, J. C. Thomson, W. J. Tucker, J. M. Urquhart, Lionel Valentine, Clifford Vanstone, Alan Veitch, Eric Vicar, C. H. Wallace, G. P. Ward, N. L. Weatherall, R. B. Wernham, Richard Wilding, E. H. Wingate, L. A. H. Woods, W. A. Woolcott, W. E. Wordsworth, F. R. Wright. Sgts.: Nov.: T. W. Coop (Sen. Sept. 15), R. S. Harrison (Sen. Sept. 24), D. E. A. Layt (Sen. Oct. 1). Dec.: Henry King (Sen Sept. 9). Cpls.: Oct.: R. O. Jenkins (Sen. Aug. 7). Nov.: C. W. Clark (Sen. Sept. 9), C. G. Haysom (Sen. Sept. 17), J. H. Jameson (Sen. Sept. 22), D. J. Mackenzie (Sen. Sept. 22), F. A. Benstead (Sen. Oct. 1), Maurice Carr (Sen. Oct. 25), Deric St. Julian Bown (Sen. Oct. 3). Ldg. Acm.: Nov.: J. K. Cheatle (Sen. Sept. 25), Geoffrey Handley (Sen. Sept. 26), T. H. Cowley (Sen. Oct. 1). Acm. 1st Cl.: Nov.: P. A. Hodgkinson (Sen. July 28), G. R. Jarvis (Sen. Sept. 29), M. McK. Charteris (Sen. Oct. 3). Dec.: W. J. Quinn (Sen. Oct. 14). Acm. 2nd Cl.: Oct.: F. M. Handley (Sen. July 10), Stewart Boyes (Sen. Aug. 23). Nov.: C. J. Cunliffe (Sen. Aug. 27), L. W. Harris (Sen. Sept. 8), J. D. T. Burnaby (Sen. Aug. 6), A. R. Clough (Sen. Sept. 19), Douglas Hughes (Sen. Sept. 23), L. H. Holdaway (Sen. Sept. 23), S. B. Carrick (Sen. Sept. 27), P. D. Lawson (Sen. Sept. 29), E. M. Instance (Sen. Oct. 1), E. W. Cockshott (Sen Oct. 2), W. G. Howgill (Sen. Oct. 14), F. C. Carpenter (Sen. Oct. 16), B. H. Malone (Sen. Oct. 25). Dec.: P. G. Jones (Sen. Oct. 1), C. S. Basilio (Sen. Oct. 15), J. M. Kennedy (Sen. Oct. 20).

Flt. Lt. (prob.) C. N. M. Bray is confirmed in his appt. Dec. 16.

Flg. Offs. (prob.) to be confirmed in their appts.:—Oct.: L. H. Aldridge. Nov.: W. R. Tapper, H. R. Vaughan-Fowler.

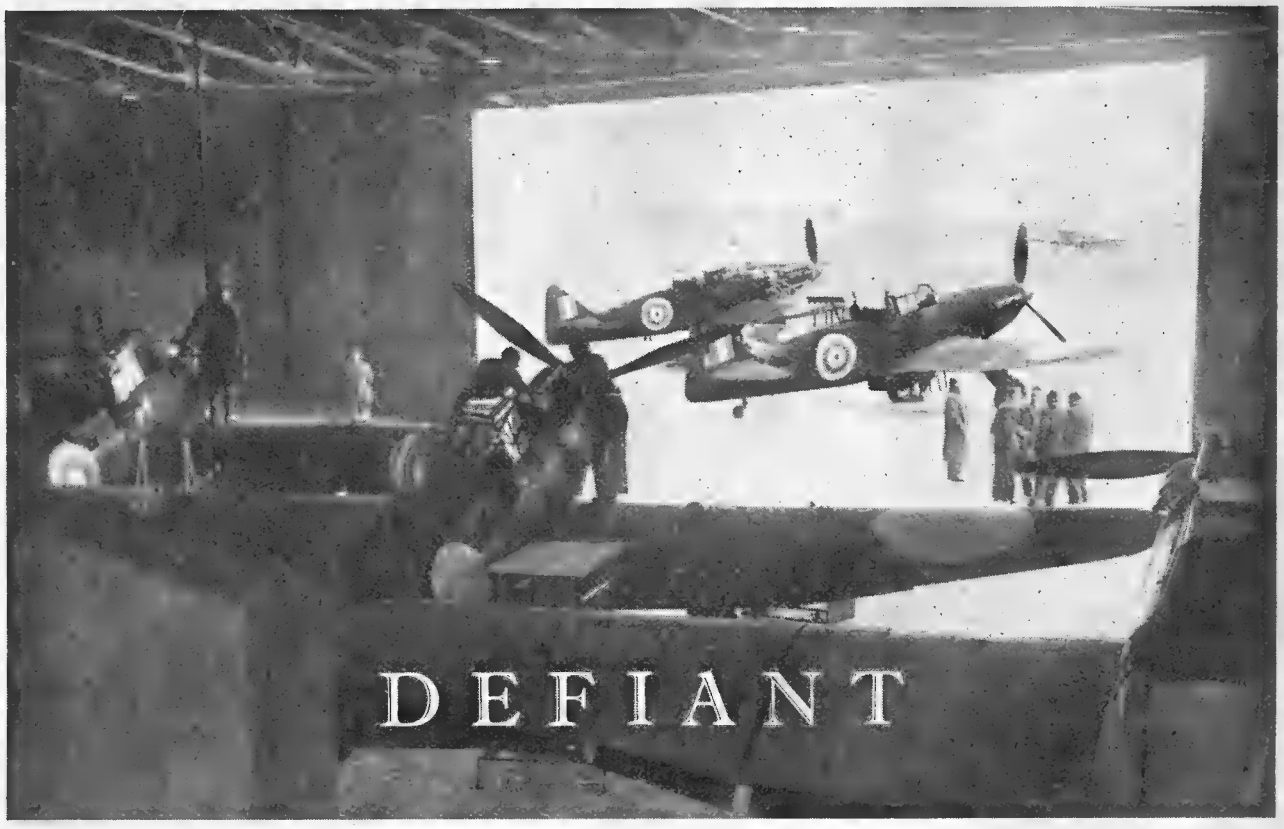
Plt. Offs. (prob.) to be confirmed in their appts. and to be Flg. Offs. (war subs.):—Aug.: R. O. Phillips, A. W. Bodfield, F. R. Wilson, E. Fowler, D. A. Pope, G. L. G. Salson. Sept.: F. S. Prior (Sen. Aug. 27), J. E. Ongley, P. J. Rossington, J. Gilbert, H. Law-Robertson, R. C. Mais, G. R. Dryden, R. V. Sweeny. E. P. Whitfield, L. K. Cock, C. B. Bond, E. S. Kennedy, W. G. Williams, A. T. Goodman. Nov.: J. T. L. Mallard, R. W. Pole, D. Stilliard, M. C. C. Turner, C. A. U. F. Chichester, R. A. Clarance. Dec.: G. R. K. Beck, W. E. Griggs, F. Honey (M.M.), F. O. Wilson, W. August, D. W. A. Barton, A. L. Baker, L. A. Clarke, W. G. Arnold, R. H. J. Jolliffe, G. M. Lloyd, G. F. Saunter, C. F. Urry, M. V. Stewart, C. C. Coates, C. E. Hanford, L. O. Regan, J. E. Rogers (M.C.), W. R. B. Brash. Jan.: D. C. Way.

Plt. Off. (prob.) C. A. Wimperis is confirmed in his appt. Aug. 23, and to be Flg. Off. (war subs.), Dec. 17 (Sen. Nov. 23).

Plt. Offs. to be granted the rank of Flg. Off. (war subs):—June: J. E. L. Lewington. Aug.: L. H. Aldridge.

Act. Plt. Offs. (prob.) to be Plt. Offs. (prob.):—Apr.: D. H. Williams. Dec.: F. Wilson, R. T. Warner, H. S. Hamman, F. Smith, H. L. Tiffin, C. E. Waithman, E. P. Wyeth, S. Boddington, R. G. Dixon, K. Laird, T. J. Daltrey, N. J. M. Tait, H. Geenty, D. E. Wheatley, J. P. Richardson, P. M. Bright, A. J. Bromly, R. G. K. Clarke, H. P. Masse. Jan.: E. Churchward, A. J. Boldero, S. F. Barker, T. Bell, D. C. F. Bloemendal, E. E. Brown, A. W. Buchanan, D. L. Chapman, W. Crisp, A. R. Davies, R. B. Eddershaw, J. P. Fennessy, G. Fitzgerald, C. R. M. Fry, F. C. Gale, R. Hiles, W. H. Hollom, C. W. Jackson, W. C. Kay, D. Langdon, C. K. Oakes, S. L. H. Parham, W. F. Savage, M. Shoot, H. W. Sollom, A. G. Stanfield, R. C. Swan, J. M. Talbot, A. A. J. Thorburn, M. G. Thorpe, J. A. Wolledge, G. H. Tringham, H. N. Aldous, A. Andrews, T. Andrews, H. W. Arnould, G. S. Atkinson, H. Barclay, A. H. Barker, C. H. L. Bartrum, K. F. M. Bush, J. H. Chadwick, R. H. Corless, J. D. Crampton, E. F. Croker, B. Fishman, D. O. Forbes, C. H. Forsdick, S. M. Gore, M. D. Lister, A. E. Mallett.

(The rest of the appointments under this date will be published next week.)



DEFIANT

THE BOULTON PAUL P.82 DEFIANT I is a single-motor low-wing cantilever monoplane of metal construction. For a two-seater it is a small aeroplane with a span and wing area less than those of the Hurricane. The wing-loading of 30 lb./sq. ft. is some 4 lb./sq. ft. higher than that of the contemporary Hurricane I. The motor is the 1,030 h.p. Rolls-Royce Merlin III, which gives a power-loading of 7.15 lb./h.p.—again substantially greater than that of the Hurricane.

Just as the Hurricane and Spitfire have now received more powerful motors, so with the Defiant; and the latest model has a notably improved performance. The airscrew was formerly a de Havilland and is now of Rotol design.

The armament of the Defiant is its most interesting feature—and was, incidentally, the whole reason for the design. The evolution by Boulton Paul of a compact four-gun turret immediately suggested a modern counterpart of the old two-seat fighter formula introduced in the 1914-18 war by the Sopwith 1½-Strutter and brought to pre-eminence as a weapon by the historic Bristol Fighter.

These aeroplanes largely depended for their effectiveness on the guns of the observer (as he was then called), but the pilot was also provided with a fixed gun. With the Defiant the field of fire—even in a forward direction—provided by the turret was sufficient to enable the designing team to dispense with the fixed armament. Thus all the guns are in the turret and are normally operated by the man in the rear cockpit.

Structurally, the Defiant is of conventional design, but is nevertheless interesting for a number of reasons quite apart from its unconventional features in the operational sense.

Thus the practice of riveting the Z-section stringers to the light alloy skin before attaching the latter to the ribs and frames is particularly noteworthy. By this system of construction the skin is not normally riveted to the frames but only to the stringers. This operation is done first and the stringers are then riveted to the frames when the sheet is being attached to the skeleton framework.

This method of construction has a number of advantages and its comprehensive use in the Defiant is made possible by the almost complete avoidance of the need for forming operations. In this way the covering of both wings and fuselage is applied by merely wrapping on flat sheets. Its advantages are:

(1) All the rivet holes are jig-drilled, with consequent saving in time.

(2) All the riveting which affects the exterior surface is done on the flat, and as the rivets are countersunk into dimpled holes, a remarkably smooth exterior is obtained.

(3) The finished skin has far fewer ripples than is usually the case when the sheet has to be formed.

The fuselage is built in two sections, that in front as a single unit and the other in three parts.

The front section is built round four extruded L-section longerons, which are attached forward to a massive braced, tubular frame. To the latter are bolted the four attachments for the tubular (steel) engine mounting.

The upper longerons are straight, but the lower pair are bent to the contour of the upper surface of the mainplane centre section, which fits into a recess in the underside of the fuselage. The external shape of the fuselage is achieved by built-up light alloy members and by complete bulkheads. The latter are shaped to the fuselage section except at the top, where they are flat and level with the corrugated light alloy decking. There is also similar decking across, but within, the fuselage at the bottom.

These decks are interrupted at the pilot's cockpit and at the wing recess. The latter is vertically below the cockpit and, after assembly, the skin of the upper surface of the centre section provides the flooring beneath the pilot.

The rear section of the fuselage, as has already been stated, comprises three units. These are two side sections, and the corrugated decking. The former are similar to each other, and each is assembled on two angle-section longerons. These longerons are linked by formers of channel section, every other one of which is braced by a tube following the chord line. They are braced to the tubes by diagonals.

When the skin is applied, the stringers—which are continuous—are riveted to the formers in the manner referred to above. The skin is nowhere attached directly to the frame except at its top and bottom longitudinal edges, where it is riveted direct to the longerons.

The deck of the fuselage rear section is a single light-alloy corrugated sheet, with its corrugations running transversely. This corrugation is done by a Pels bending machine, which will bend or corrugate sheet in strips up to 13 ft. wide. Besides doing all the corrugating, this ingenious German machine is used in the production of the Defiant to bend the light-alloy sheet which forms the leading edge of the mainplane.

Once completed, and with control fairleads and guides installed, the various units of the fuselage are bolted together. The after-end of the fuselage beyond the rear section just described consists of a tubular structure originally designed to support and accommodate a retractable tail wheel and provide the mounting for the cantilever tail unit. The tailwheel is no longer retractable in the production models of the Defiant.

Turning to the general construction of the mainplane, it is seen to consist of five units: a centre section, two outer wing panels, and two detachable wing tips.

In plan the mainplane approximates to the ideal elliptical shape and yet retains those straight lines which are so helpful to rapid production. The wing-tip units alone are of rounded shape and require forming operations. The three major units have straight tapers, both in thickness and in plan.

The mainplane is built up round two spars, both of which comprise top and bottom extruded light-alloy booms and webs of vertically corrugated light-alloy sheet. The booms are of T-section for the centre section and of L-section for the outer panels. The spar flanges are slightly tapered by a straightforward milling operation.

The skin of the upper surface is applied first, in a similar way to that of the fuselage except that the Z-section stringers, which run spanwise, are cut at some of the ribs. When this is done there is an exception to the normal method of attachment and the skin is flush-riveted to the rib boom while the stringer is also attached by simple angle brackets.

The lower surface skin is applied after that of the upper surface, and " pop " riveting has to be employed for attaching the sheet to the ribs and spars.

The leading edge of the mainplane consists of light-alloy sheet, bent in the Pels bending machine, and fixed on light-alloy nose formers. This sheet is fixed to the spar flanges, top and bottom, by counter-sunk steel screws which are provided with spun-in Monel-metal tapped bushes.

The mainplane centre section accommodates the two leak-proof fuel tanks outboard and the inwardly retracting undercarriage. The latter, which is hydraulically operated, incorporates Lockheed " Airdraulic " shock-absorber legs which hinge on skew beams built into two of the centre-section ribs.

Hydraulically operated split flaps extend along the trailing edge of the wing and have a width equal to about 18 per cent. of the chord. The flaps are interrupted beneath the fuselage because of the glycol radiator, which is situated unusually far aft. The oil cooler and carburetter air intake are further forward under the motor within a single duct.

The control surfaces are of metal, fabric covered. The ailerons are of the Frise type. Rudder and elevators are horn-balanced and have trimming tabs. An interesting point is that the elevators are interchangeable, the tab-operating rod being at the top on one side and below on the other.

An ingenious feature of the control system is the mounting of the control column in the pilot's cockpit on the seat frame. This ensures that the control column always has a constant effective length whatever the position of the adjustable seat.

The four-gun Boulton Paul turret in the Defiant was one of the first of the rotating turrets and mounts 0.303-in. belt-fed Browning machine-guns. The operation of the turret is hydraulic by a system quite separate from that in any other part of the aeroplane.

The Boulton Paul turrets have developed a long way since the days when the Defiant was designed. The Company's pioneer work in this field has played a large part in retaining Britain's lead in the development of these important units.

The high drag of even such a compact turret as that used in the Defiant was one of the major problems facing the designers. This has been greatly reduced by " disappearing fairings " both forward and aft of the turret. These fairings are built up from spruce and three-ply and hinge downwards to permit the guns to be traversed. They are operated by pneumatic jacks actuated by cams fitted to the turret.

It is this turret, combined with the good manœuvrability and relatively high speed of the Defiant which has enabled it to make its mark in history as the World's first fighter to have an enclosed power driven turret.

Brief Specification of Defiant I

MOTOR.—One Rolls-Royce Merlin III motor giving 1,030 h.p. at 16,500 ft.

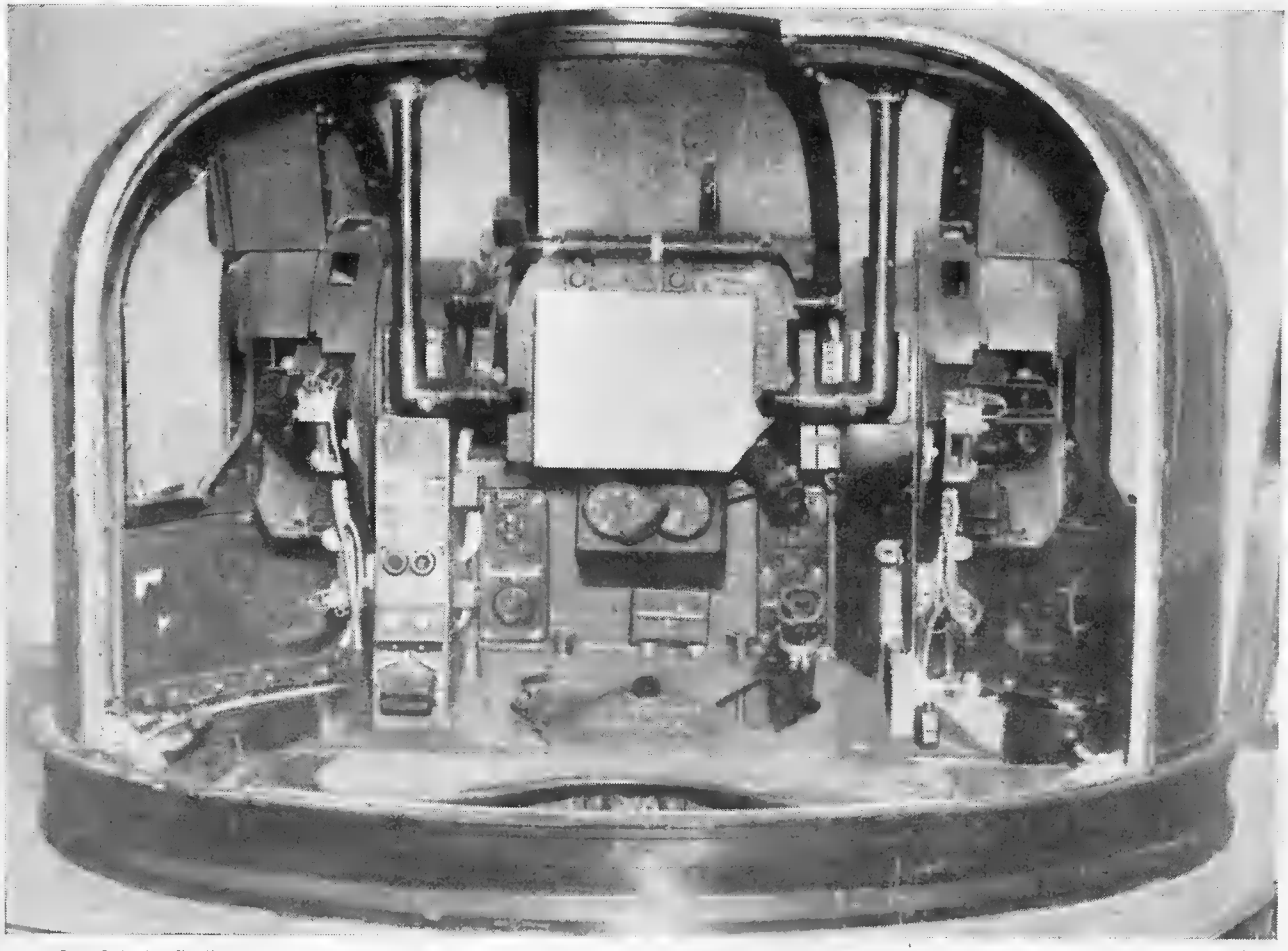
ARMAMENT.—One Boulton Paul hydraulically operated turret mounting four 0.303-in. Browning machine-guns.

DIMENSIONS.—Span, 39 ft. 4 ins.; length, 35 ft. 4 ins.; height, 11 ft. 4 ins.; wing area, 250 sq. ft.; aspect ratio, 6.18.

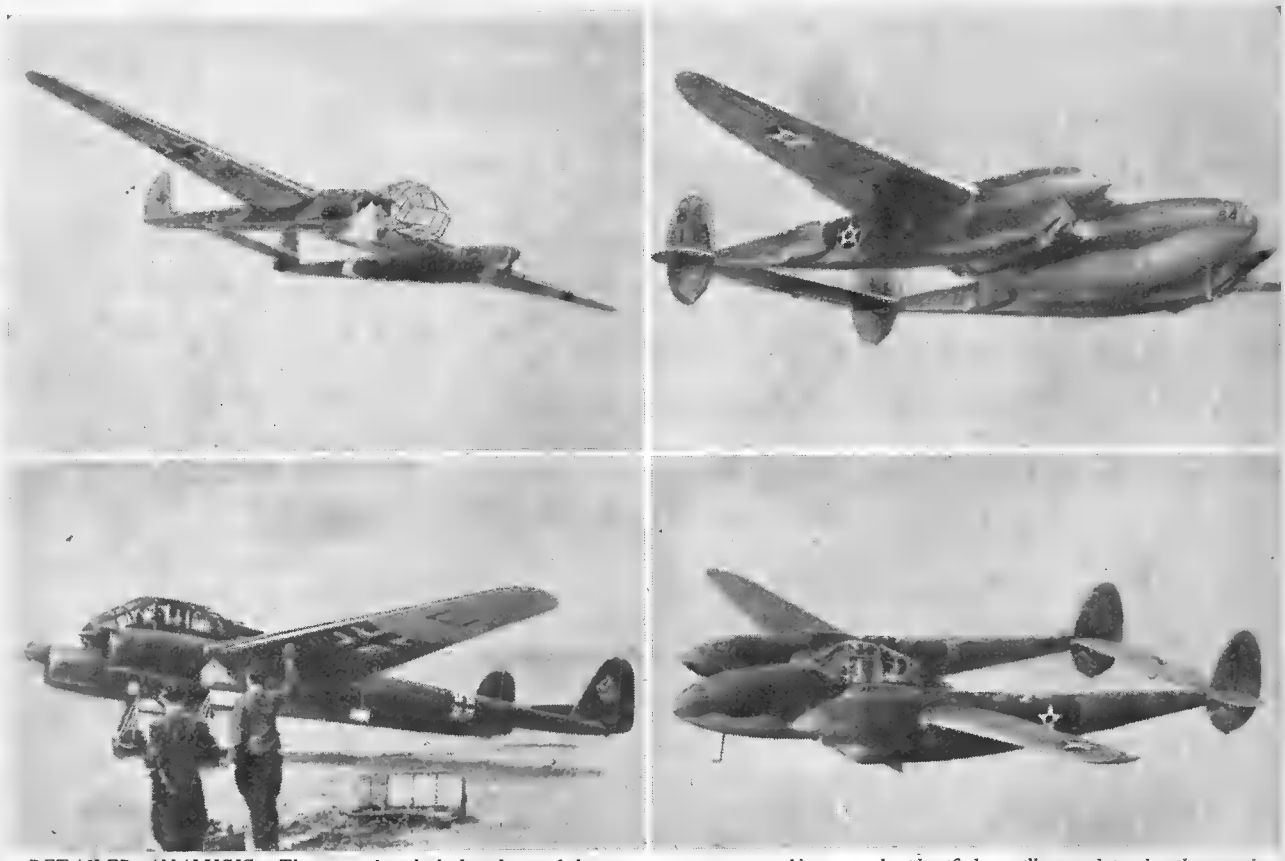
WEIGHT.—Loaded, 7,500 lb.

LOADINGS.—Wing, 30.0 lb./sq. ft.; power, 7.15 lb./h.p.; span, 2.06 lb./sq. ft.

PERFORMANCE.—Around 300 m.p.h. at 16,500 ft.

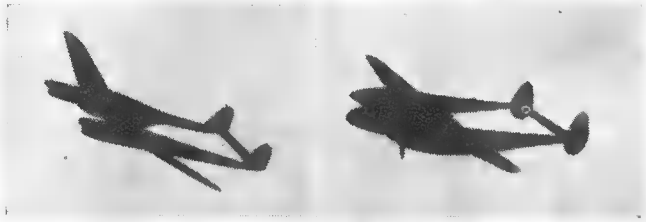


BOX OF TRICKS.—The Boulton Paul turret used in the Defiant two-seat fighter. This turret mounts four 0.303 in. Browning machine-guns and is hydraulically operated. In the lower foreground may be picked out the control handle which governs the rate of rotation and elevation of the guns. The firing button is on the top of this control. Above is the sight.



DETAILED ANALYSIS.—The points by which the subjects of the previous recognition problems can be identified are illustrated in the photographs above of the Focke-Wulf Fw 189 (left) and the Lockheed P-38 (right), and the drawings on the opposite page.

Aircraft Recognition



207 *THE PREVIOUS PROBLEMS.—(Left) an Fw 189 and (right) a Lightning.* 208

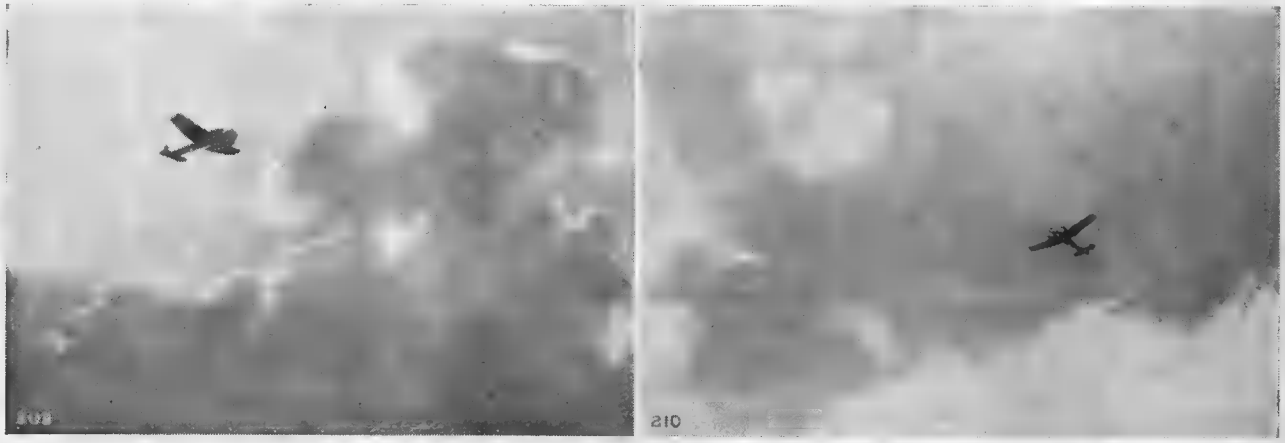
THE FOCKE-WULF Fw 189 general-purpose twin-boom monoplane (two 450 h.p. Argus As 410 air-cooled inverted Vee motors) and the Lockheed 322-61, the Lightning I—or P-38 of the U.S. Army—single-seat long-range fighter (two 1,090 h.p. Allison V-1710-C-15 turbo-supercharged liquid-cooled Vee motors) were the subjects of the previous recognition problems.

The Focke-Wulf 189 bears a strong resemblance to the Fokker G-1 Faucheur, which probably inspired it. It is being used for ground attack, reconnaissance and ambulance work on the Russian front.

In this view the chief recognition features are the cockpit nacelle mounted on the rectangular centre section of the low wing, which is sharply swept back on the leading edge with rounded tips and straight trailing edge, the inverted Vee motors fairing into the twin booms, which, in turn, fair into the twin square-cut fins and rudders with the rectangular tailplane between them.

The Lockheed P-38 is now in squadron service with the United States Army Air Forces and may soon be seen in this country.

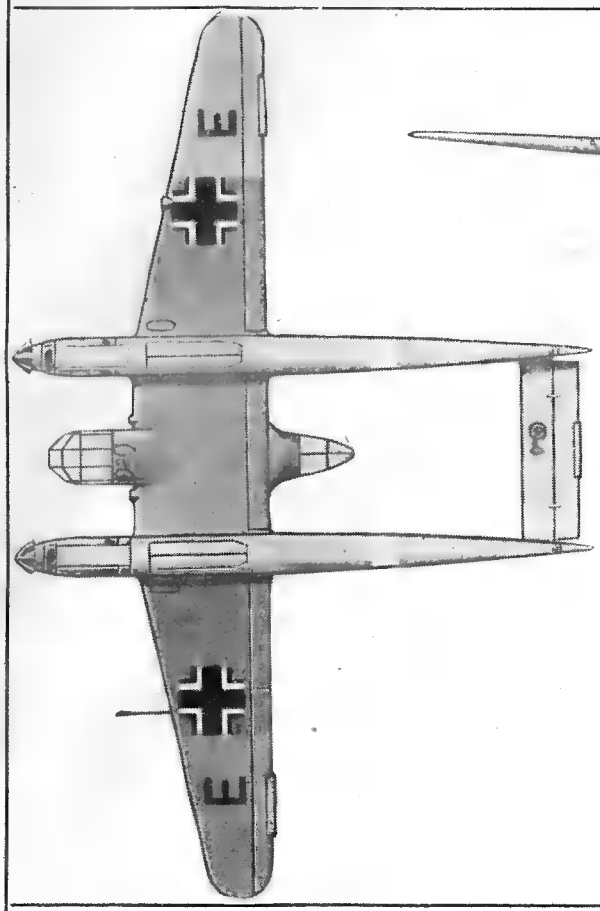
The Lightning has the same layout as the Fw 189, but the cockpit nacelle extends beyond the motors and is slimmer and more pointed. The mid wing is more sharply tapered with pointed wing tips and the twin egg-shaped fins and rudders extend below the booms. The tailplane ends in rounded tips.

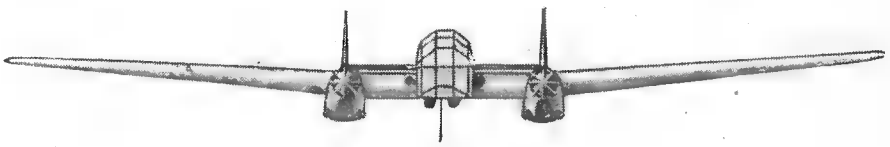


209 210

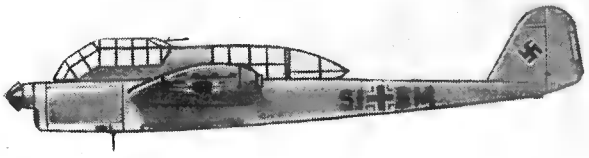
FOR IDENTIFICATION CV.—Two more photographs to give practice in the recognition of Allied and enemy aeroplanes. What they are and notes their characteristics will be published with two more photographs on Feb. 27. When the page is viewed at a distance of 1 ft. the aeroplane on the left is represented as flying at about 1,620 ft. at a distance of 310 yds.; the aeroplane on the right is shown as it would appear at about 1,800 ft. at a distance of 600 yds.

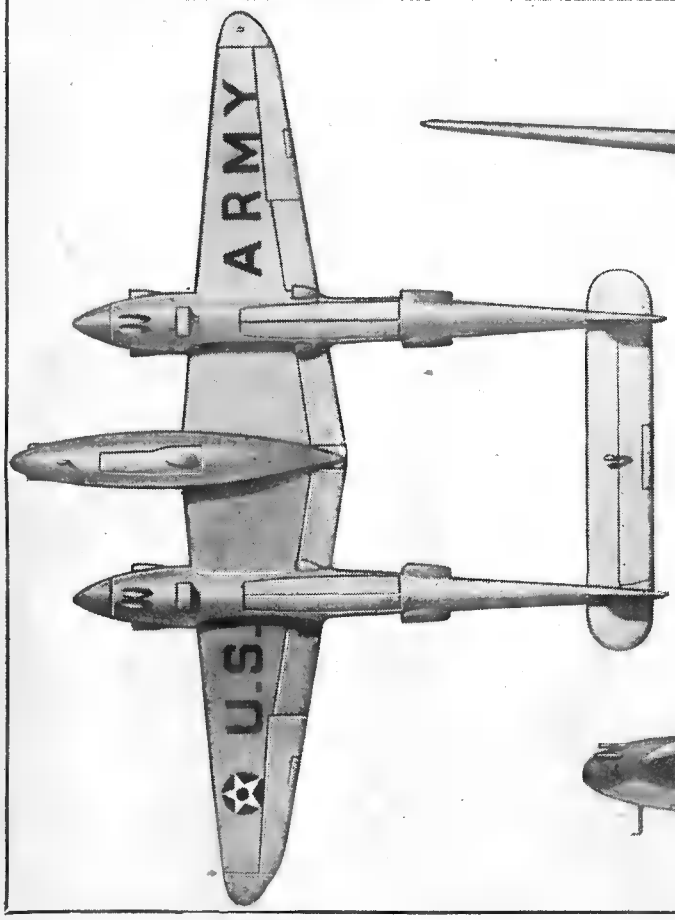
AIRCRAFT RECOGNITION

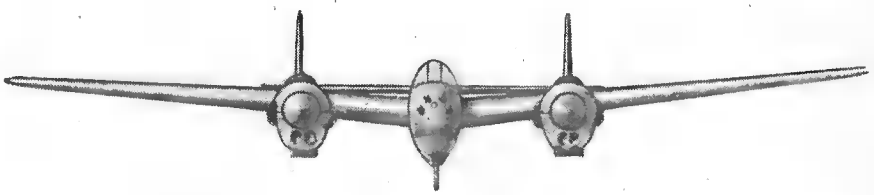




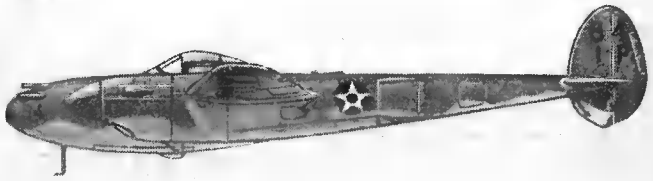
THE FOCKE-WULF Fw 189







THE LOCKHEED P-38 THE LIGHTNING



AIR TRANSPORT

The Corporation Overseas

MR. W. L. RUNCIMAN, Director-General of British Overseas Airways, returned to England on Feb. 3 after a five-months' tour of the routes and establishments of the Corporation in the Empire. In the course of his tour he flew a distance equal to one-and-a-half times round the World at the Equator and, in the first three months, covered an average distance of 10,000 miles a month.

With two exceptions all his flying was done in aeroplanes operated by or for the Corporation. The exceptions were a flight from Jerusalem to Egypt in an Egyptian aeroplane and between two places in Siam when he was escaping to Burma after the Japanese forces had landed in Siam. An interesting fact is that British Airways' services in that part of the World were interrupted for only 36 hours by the Japanese entry into Siam. The Corporation had planned alternative routes in advance.

Mr. Runciman's tour followed a route roughly as follows:—England to Lisbon, West Africa, Khartoum, Eritrea, back to Cairo, Jerusalem, Durban, Nairobi, across the Congo to Leopoldville, Cairo again, Eritrea, Addis Ababa, Teheran, Cairo, Baghdad, Rangoon to Bangkok and back to Rangoon by a somewhat unorthodox route, and Cairo.

The brief account of the Corporation's activities in the Middle East and Africa which Mr. Runciman gave in an interview with the Press shows that British air transport is making a great contribution to the War effort and is co-operating with the Air Force and the Army. A number of R.A.F. pilots have been temporarily loaned to the Corporation and civil and Service pilots are flying equipment of many types, including Lease-Lend civil aeroplanes from the United States The services are civil services still, but are operated for the Government only and for Government business. In Africa and the Middle East especially British Airways may aptly be referred to as the maid-of-all-work of an over-burdened Government.

Though concentrating on the War, the Corporation is not neglecting the future, and Mr. Runciman referred to services taking 20 hours to India, 30 to South Africa and about 50 hours to Australia as technically possible, but from an economical standpoint not perhaps practicable. These times have been based on experience with the North Atlantic and by marking out the Empire routes in stages of 2,000 or 2,500 miles and calculated on an air speed of 300 m.p.h. Mr. Runciman expects the immediate post-War period to be a makeshift one until the technical developments of the War can be applied to civil aeroplanes.

Both the Corporation and British air transport as a whole must have derived much benefit from Mr. Runciman's tour. His enthusiasm for and interest in flying and his genial skill in negotiations as a whole must have won much goodwill for British air transport.

Air Mails from Australia

EMPIRE AIR MAIL services from Australia have been suspended and resumed again during the past week. On Feb. 3 the Australian Postmaster-General announced that all air mails from Australia had been temporarily suspended.

The following day Mr. A. S. Drakeford, Australian Minister for Air, announced that the air mail services between Australia, the Netherlands East Indies and Singapore would be resumed from that day, Feb. 4, but that mails for the troops in Singapore would probably be subject to some delay. As Singapore had been besieged for almost a week when this statement was made, the fact that air mail services are operating at all to that destination, and that attention should be drawn to them, is a matter of some surprise.

Reports from Australia have said that air mail services to the Middle East and the United Kingdom by way of Africa would also be temporarily suspended.

New French Flying-boats?

VICHY FRANCE is reported to be building five large flying-boats capable of flying the Atlantic non-stop in 20 hours and carrying 50 passengers, at a speed of 180 m.p.h There is no further information about the new flying-boat. Possibly it is the Potez 40-ton flying-boat about which there were vague reports early in 1940.

An Empire Flying-boat Shot Down

AN Empire flying-boat of Qantas Empire Airways, believed to be the Corio, was shot down off Kupang, Netherlands Timor, by Japanese fighters on Jan. 30. Ten of the 13 passengers were killed and three of the crew of five.

The loss of the Corio was announced on Feb. 3 by Mr. A. S. Drakeford, Australian Minister for Air. The Corio was flying from Darwin to Singapore on the Sydney-Singapore section of the Empire route and its arrival at Kupang apparently coincided with a Japanese air raid there.

Japan attacked commercial air liners early in the Sino-Japanese War and more than one D.H. 86 of Imperial Airways was damaged by Japanese machines before the Bangkok-Hong Kong service was abandoned. Several attacks have also been made on aeroplanes of the China National Aviation Corporation.

So far commercial aeroplanes of the belligerent countries in the Western hemisphere have been free from such interference except for the attack by a German seaplane on a DC-3 of K.L.M., on Sept. 29, 1939, on the regular Malmö-Amsterdam route, when one of the passengers was killed, and the more recent attack on one of the re-engined Ensigns of British Airways over the Channel.

Saving Space

FREIGHT is no longer accepted by Deutsche Luft Hansa on any of its services. Traffic is apparently restricted to passengers and mails.

Another Airgraph Service

INDIA started an Airgraph service to Great Britain on Feb. 2. The time in transit is expected to be between two and three weeks and the service is experimental. The Airgraph letters are photographed at Bombay and the cost to members of the Services is 3 annas and to civilians 14 annas.

A Light Aeroplane Record

A LIGHT AEROPLANE RECORD is claimed by the United States for a non-stop flight between Canada and Mexico last October. The flight was made by Mrs. Evelyn Burleson in a Taylorcraft (65 h.p. Lycoming motor). She flew from Sea Island airport, Vancouver, to Tiajuana, Mexico, 1,700 miles, in 16½ hrs., at an average speed of 103 m.p.h.

The Taylorcraft was a standard 1940 model which had done about 600 hrs.' flying. Two extra fuel tanks were fitted. One which held 49 gals. was designed to rest partly on the seat beside the pilot and partly on the floor. A second holding 19 gals. was placed in the baggage compartment. These two brought the total fuel capacity up to 80 gals. An extra oil tank was designed to fit under the motor cowling on a level with the crankcase and especially heavy shock cord was fitted in the landing gear.

With these modifications and extra equipment, including two wobble pumps and a parachute, the weight of the Taylorcraft was increased by 300 lb. to 1,450, but the C.G. was only one inch off the original. The only instruments used by Mrs. Burleson were an airspeed indicator, compass, turn-and-bank indicator, altimeter, oil pressure, tachometer and temperature gauges. When she arrived at Tiajuana Mrs. Burleson had petrol for another five or six hours' flying left and had used only one extra quart of oil.

Pan-American's Plans

AT THE END OF NOVEMBER LAST, Pan-American Airways was planning to extend its services in Africa from Khartoum to a port on the Persian Gulf and within the next few months to extend the service still farther East to Singapore. With its more direct service between the U.S.A. and Singapore the new route would have completed the Pan-American round-the-world circuit.

These plans will have to be suspended now because of the War in the Far East, at least in so far as they relate to Singapore. We hear that several Clippers of Pan-American Airways have been taken over by the U.S. Government.

Last September Pan-American Airways received permission to call at Suva and Palmyra Island on the San Francisco-Auckland service. Australian comment on this new departure from the original route was that New Caledonia might be omitted from the route, but that eventually there would probably be a new service operating from Brisbane, by way of New Caledonia, to link with Pan-American Airways at Suva.

SIDELIGHTS FROM THE PAST—XI

THE MOST AMAZING FEAT of any British airship was probably the breakaway flight of the R.33, which, after riding out a gale with a crew of 20 on board, was torn from its mooring mast at Pulham, severely damaged, and yet returned safely after a flight over the North Sea of 30 hours.

The R.33 had been stored at Cardington in 1921, when the Government abandoned its airship programme after the tragedy of the R.38. When the programme was revived the R.33 was recommissioned, and at the beginning of April, 1925, was flown to Pulham, Norfolk. The breakaway occurred when the R.33, fully gassed, fuelled and provisioned, was moored there waiting for the weather to improve before starting an experimental flight. There was a crew of 20 on board, under the command of Flt. Lt. R. S. Booth, as First Officer.

After riding out the gale at the mast during the night of April 15, the R.33 broke away at 09.40 hours on the morning of the 16th in a wind of more than 50 m.p.h. The breakaway was caused by the failure of some part of the mooring mast-head. The cone of the mast was carried away by the R.33 and, probably because of this extra weight, the bow of the ship dropped as it parted and struck the gallery surrounding the mast-head. The framework of the bow was severely damaged and the forward gas-bag was torn and deflated.

The R.33 was blown stern foremost out towards the North Sea, but within 15 minutes Flt. Lt. Booth had one of the motors going, the R.33 was partly under control and was in radio communication with Pulham.

Because of the gale the R.33 could make no headway, but constant radio touch was maintained with Pulham and Croydon, and Flt. Lt. Booth was advised about the courses to be held so as to miss the worst of the weather. Late that afternoon, the R.33 reached Holland tail first and, as the wind had dropped, began to make slow progress homewards late in the evening. Unfortunately, the weather did not improve so much as had been expected. There was still a wind of 30 knots, and the ground speed of the R.33 was only seven knots.

At 08.00 hrs. on April 17 the R.33 was still over the North Sea and about 90 miles from its base, but shortly before 14.00 hrs. it arrived back at Pulham, and by 15.50 hrs. was housed safely in its shed.

This epic story of the R.33 was not a record, nor the first occurrence of this kind, as the U.S. airship ZR1, the Shenandoah, had had a similar adventure, although it had not been so severely damaged as the R.33.

THE R.33, APRIL 17, 1925.

The photographs above show, at the top the R.33 before the adventure and on the right the damage to the bows.

The R.33 and its sister ship, the R.34, which crossed the Atlantic in 1919, were the first really successful British airships. The R.33 was similar to the Zeppelin L.33, and was built in 1918. In 1919 it made long flights over Europe and the North Sea, and between Feb. and Aug., 1921 spent about 150 days on and off the mast at Pulham, during which it made more than 100 flights for mooring experiments.

After its breakaway flight, the R.33 was repaired, was flying again by October, and was used for experiments in flying on and off an airship by a light aeroplane, the D.H.53. Later still, it was used for experimental work to determine the aerodynamic forces on airship hulls. It was finally scrapped in 1927.

Particulars of the R.33 were:—Length, 643 ft.; max. diameter, 78 ft. 9 ins.; cubic capacity, 1,950,000 cubic ft.; gross lift, 59.2 tons; disposable lift, 28 tons; five 230 h.p. Sunbeam Maori motors and a top speed of 46 m.p.h.

Flt. Lt. Booth, who commanded the R.33 on the breakaway flight, commanded the R.100 on its flight to Canada and back in 1930 and is now a Wing Commander attached to the Ministry of Aircraft Production.

SPORTING MEMORIES—LXXXIII

THE COMPER MOUSE (130 h.p. D.H. Gipsy Major motor) was the first new Comper type to be built at Heston by the Comper Aircraft Company after it moved from Hooton. Though the Mouse made its first flight in September, 1933, the design had been completed two years before and the name of "Comper Air-Car" had been chosen.

The Comper Mouse (130 h.p. D.H. Gipsy Major)—1933.

The Mouse was a three-seat low-wing cabin monoplane and was designed to cruise at 130 m.p.h. with a range of 600 miles. It had four outstanding features: a retractable undercarriage, a new method of folding the wings, a sliding roof over the cabin which could be opened in flight, and the arrangement of the seats. The two front seats were side-by-side, but either could be unfastened and slid back so that the person who was not piloting could move back and talk to the third person seated behind.

The Mouse was kept in its teething stage until May, 1934, to make sure that no expensive modifications would be needed after production began, but then it was ready for sale. It was entered in the King's Cup Race of that year but was never put into production because that Summer the Comper Company was reorganised as Heston Aircraft Co. Ltd.

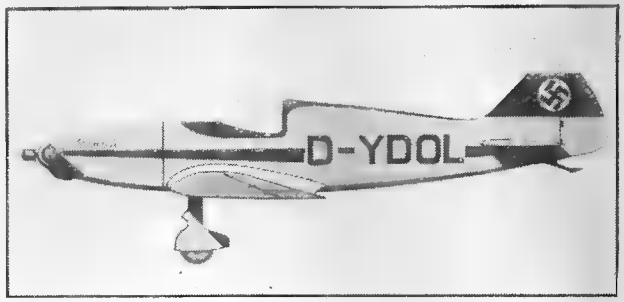
In the 1934 King's Cup Race the Mouse averaged 132.75 m.p.h. and was one of four Comper entrants.

GERMAN AEROPLANES IN SERVICE—XXVI

THE MÖLLER STOMO 3

(One 18 h.p. Kroeber M4 motor)

TYPE.—Communications.
CREW.—One.
DIMENSIONS.—Span, 27 ft. 10.5 ins.; length, 19 ft. 8 ins.; height, 4 ft. 3 ins.; wing area, 107.6 sq. ft.
WEIGHT.—Loaded, 528 lb.
PERFORMANCE.—Max. speed, 94 m.p.h. at sea level; initial climb, 252 ft. per min.; service ceiling, 7,545 ft. Made by Ing. H. G. Möller, Bremen. Few built.

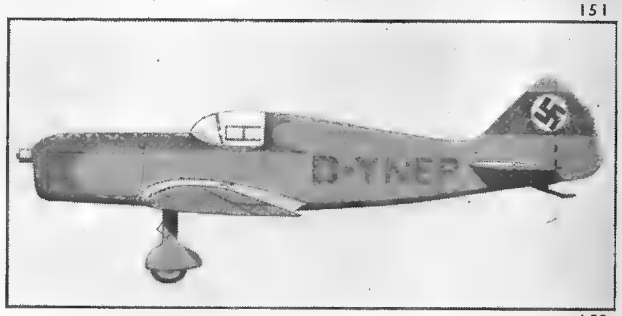


151

THE MÖLLER STÜRMER S5

(One 55 h.p. Zundapp Z9-92 motor)

TYPE.—Communications.
CREW.—One.
DIMENSIONS.—Span, 24 ft. 11 ins.; length, 19 ft. 4 ins.; height, 5 ft. 3 ins.; wing area, 103.3 sq. ft.
WEIGHTS.—Empty, 451 lb.; loaded, 726 lb.
PERFORMANCE.—Max. speed, 133 m.p.h. at sea level; range, 405 miles at 130 m.p.h.; initial climb, 1,062 ft. per min. Made by Ing. H. G. Möller, Bremen. Few built.



152

THE MÜCKE

(One 50 h.p. Zundapp motor)

TYPE.—Communications.
CREW.—Two.
DIMENSIONS.—Span, 32 ft. 10 ins.; length, 20 ft. 11 ins.; height, 4 ft. 11 ins.; wing area, 150.6 sq. ft.
WEIGHTS.—Empty, 616 lb.; loaded, 1,056 lb.
PERFORMANCE.—Max speed, 105 m.p.h. at sea level; service ceiling, 11,480 ft. Made by Adalbert Schmid. One or two built.


153

THE SIEBEL Fh 104A

(Two 280 h.p. Hirth H.M.508H motors)

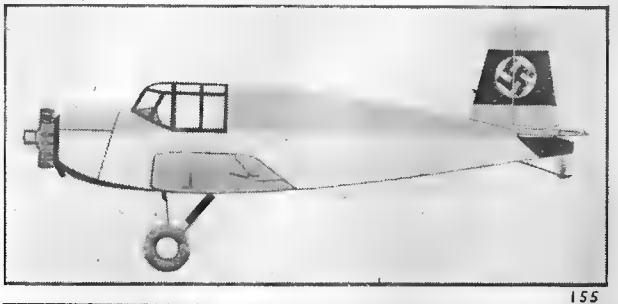
TYPE.—Communications.
CREW.—Five.
DIMENSIONS.—Span, 39 ft. 5 ins.; length, 31 ft. 1 in.; height, 8 ft. 8 ins.; wing area, 240 sq. ft.
WEIGHTS.—Empty, 3,550 lb.; loaded, 5,180 lb.
PERFORMANCE.—Max. speed, 220 m.p.h. at sea level; range, 590 miles at 196 m.p.h.; initial climb, 1,312 ft. per min.; service ceiling, 20,000 ft. Made by Siebel Flugzeugwerke G.m.b.H., Halle Saale 2, formerly Flugzeugwerke Halle. A fair number built.

154

THE SIEBEL Si 202 HUMMEL

(One 45 h.p. Salmson 9-Ad motor)

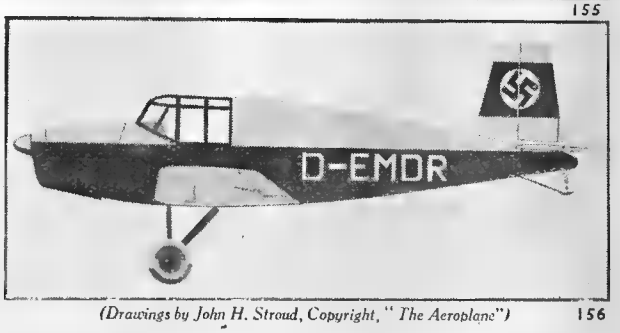
TYPE.—Communications.
CREW.—Two.
DIMENSIONS.—Span, 34 ft. 5 ins.; length, 21 ft. 0 in.; height, 6 ft. 0 in.; wing area, 150.6 sq. ft.
WEIGHTS.—Empty, 660 lb.; loaded, 1,144 lb.
PERFORMANCE.—Max. speed, 96 m.p.h. at sea level; range, 290 miles at 87 m.p.h.; service ceiling, 10,825 ft. Made by Siebel Flugzeugwerke G.m.b.H., Halle Saale 2. Few built.


155

THE SIEBEL Si 202 HUMMEL

(One 50 h.p. Zundapp Z9-92 motor)

TYPE.—Communications.
CREW.—Two.
DIMENSIONS.—Span, 34 ft. 4 ins.; length, 21 ft. 0 in.; height, 6 ft. 0 in.; wing area, 150.6 sq. ft.
WEIGHTS.—Empty, 700 lb.; loaded, 1,200 lb.
PERFORMANCE.—Max. speed, 100 m.p.h. at sea level; range, 310 miles at 87 m.p.h.; initial climb, 1,128 ft. per min.; service ceiling, 9,860 ft. Made by Siebel Flugzeugwerke G.m.b.H., Halle Saale 2. Few built.



156

(Drawings by John H. Stroud, Copyright, "The Aeroplane")

FORTHCOMING EVENTS

Feb. 13.—**Hoddesdon.**—S.C. No. 128 (Hoddesdon).—Preliminary Class Test.—At the Clock House.—19.30 hrs.
Feb. 13.—**Hounslow.**—S.C. No. 164 (Hounslow, Feltham and District).—Meeting at the Lion and Lamb Hotel, High Street.—19.00 hrs.
Feb. 13.—**Preston.**—S.C. No. 249 (Preston and District).—Beginning of a series on "Aircraft Identification by Mr. Pratt.—At Central Police Station.—19.30 hrs.—All Spotters invited.
Feb. 14.—**Richmond.**—S.C. No. 184 (Richmond)).—Meeting at A.R.P. Headquarters, Lion House, Red Lion Street.—19.30 hrs.
Feb. 14.—**Ayrshire.**—S.C. No. 166 (Ayrshire R.S.A.).—Visit to the Stewarton Model Aeroplane Club.—Meeting at the School, Stewarton.—15.00 hrs.
Feb. 15.—**Newbury.**—R.O.C.C. Branch 42 (Newbury).—Meeting postponed from Feb. 1.—At Newbury Grammar School.—14.15 hrs.
Feb. 15.—**Exeter.**—R.O.C.C. Branch 103 (Exeter and District).—Third Class Test.—Talks and Films provided by courtesy of R.A.F.—At University College, Gandy Street.
Feb. 15.—**York.**—R.O.C.C. Branch 120 (Ebor).—Meeting at the City Arms Hotel.—10.30 hrs.
Feb. 15.—**Worcester.**—S.C. No. 28 (Worcester).—Meeting at Marl Bank, Rainbow Hill.—11.00 hrs.
Feb. 15.—**Basingstoke.**—S.C. No. 30 (Basingstoke).—Inter-club Competition on Second Class Test.—Recognition films if available.—At Thornycroft Canteen.—14.30 hrs.
Feb. 17.—**Newport.**—S.C. No. 40 (Newport).—Meeting at the Newport Corn Exchange.—19.30 hrs.
Feb. 18.—**Blackfriars.**—S.C. No. 12 (Blackfriars).—Instruction Classes and Tests.—In Cinema, Unilever House.—17.30 hrs.
Feb. 18.—**Kentish Town.**—S.C. No. 16 (St. Pancras).—Talk by Mr. Newton on "Armaments."—Intermediate Tests.—At the North Western Polytechnic, Prince of Wales Road.—18.00 hrs.
Feb. 18.—**Stoke-on-Trent.**—S.C. No. 60 (Stoke-on-Trent).—Second and Third Class Tests.—At Club Headquarters.
Feb. 18.—**Rickmansworth.**—S.C. No. 81 (Rickmansworth).—Instruction and Discussion on aeroplanes in new Third Class Test.—At Picture House.—19.30 hrs.
Feb. 18.—**S.E. London.**—S.C. No. 98 (S.E. London).—Meeting at S.E. London Technical Institute, S.E.4.—19.00 hrs.
Feb 18.—**Ealing.**—S.C. No. 111 (Ealing).—Meeting at Hanwell Library, Hanwell Broadway.—19.00 hrs
Feb. 18.—Hendon.—S.C. No. 124 (Hendon).—Talk by F. Norman, R.O.C.—At Hendon Technical College.—19.30 hrs
Feb. 18.—**Belfast.**—S.C. No. 151 (Belfast Roof Spotters No. 1).—Meeting in A.R.P. Post, 45, Howard Street.—20.00 hrs.—All Spotters invited.
Feb. 19.—**Woking.**—S.C. No. 169 (Woking and District).—Meeting at the "Lion" Works Association Hall, Oriental Road.—19.30 hrs.
Feb. 20.—**Streatham.**—S.C. No. 13 (South London).—Third Class Test.—Photographic Recognition.—Talk on the Development of the Hawker Hurricane.—At 2/4, Leigham Court Road, opposite Streatham Hill Station.—18.30 hrs.
Feb. 20.—**Glasgow.**—S.C. No. 35 (Glasgow and West of Scotland R.S.A.).—Talk and Film Show by Mr. Heigh, of Babcock and Wilcox.—In Cooper's Smokeroom.—19.30 hrs.
Feb. 20.—**Hoddesdon.**—S.C. No. 128 (Hoddesdon).—Club Night.—At The Clock House.—19.30 hrs.
Feb. 20.—**Stapleford.**—S.C. No. 159 (South Erewash R.S.C.).—Meeting in the Constitutional Club.—18.30 hrs.

Woodason Aircraft Models

MANY READERS who are familiar with the excellent Woodason aeroplane models will be interested to know that Mr. V. J. G. Woodason, who is responsible for them, is again trading under the name of Woodason Aircraft Models, and is in no way connected with the Morson Manufacturing Co., Ltd., which, as announced in last week's issue of THE AEROPLANE, was formerly known as Woodason Aircraft Models, Ltd. His business address is 91, North Hyde Lane, Heston, Middlesex.

AIR TRANSPORT AWARDS.—(Left) Captn. J. Kelly Rogers, of British Airways, who has received the O.B.E. He commanded the Berwick in which the Prime Minister returned from the United States recently. (Right) Capt. Q. Tepas, one of the senior pilots of K.L.M. who has also reccived the O.B.E. in recognition of his own and his Company's services.

The "War 'Planes" Card Game

SALES of "War 'Planes" playing cards are curtailed by the "Limitation of Supplies" Order and the "Control of Paper" Order, and since for the present quota period the demand has now exceeded the supply we regret that no more packs will be available for some weeks.

Back Copies of "The Aeroplane"

MR. W. H. E. THOMAS will send current issues of THE AEROPLANE from Feb. 6, 1942, to Dec. 25, 1942, inclusive, to the writer of the highest cheque, payable to the R.A.F. Benevolent Fund, received by him at Roundway Park, Devizes, before Feb. 28. Copies will be despatched within 10 days of issue. No cheques will be returned, unsuccessful bids being considered as donations to the Fund.

New Patents

542,560.—F. Heather.—Filters for aircraft.—July 9, 1940.
542,580.—R. Tondeur and Bowden (Engineers) Ltd.—Remote-control of parts actuated through flexible power-transmission mechanism.—July 10, 1940.
542,515.—W. L. Brintnell.—Landing-gear for aircraft.—Aug. 23, 1940.
Opposition period expires Mar. 28, 1942.
Printed specifications available Feb. 12, 1942

The fact that goods made of raw materials in short supply because of war conditions are advertised in this journal, should not be taken as an indication that they are necessarily available for export.

PERSONAL NOTICES

BIRTHS

Beattie.—On Feb. 3, at Walton-on-Thames, to Betty (*née* Howorth), wife of Lt. R. I. Beattie, R.E., attached R.A.F.—a son.
Carter.—On Jan. 26, at Newquay, to Bessie (*née* Cowtan), wife of Flg. Off. H. D. Carter, R.A.F.V.R.—a son.
Chadwick.—On Jan. 25, at the Halifax General Hospital, to Sheila (*née* Hellewell), wife of Plt. Off. G. K. Chadwick, R.A.F.V.R.—a daughter.
Coghlan.—On Feb. 1, at Fernhurst, to Rosemary (*née* Snelling), wife of Flt. Lt. P. B. L. Coghlan, R.A.F.V.R.—a daughter.
Egerton.—On Jan. 27, at Crickhowell, Breconshire, to Flt. Lt. and Mrs. Graham Egerton—a son.
Harvey.—On Jan. 28, at Kingston, Ontario, to Jean (*née* Andrew), wife of Flg. Off. H. Harvey, R.A.F.—a son.
Haworth-Booth.—On Feb. 3, at Salisbury, to Micky, wife of Wng. Cmdr. Robin Haworth-Booth—a son.
Jarman.—On Jan. 31, at Pinner Hill, to Betty (*née* Puttock), wife of Grp. Capt. L. E. Jarman, D.F.C.—a son.
Kimber.—On Jan. 29, at Oxford, to Betty (*née* Amery), wife of Flg. Off. J. C. B. Kimber, R.A.F.V.R.—a son.
Kirk.—On Feb. 1, at Lincoln, to Dorothy (*née* Gadd), wife of Wng. Cmdr. J. E. Kirk, R.A.F.—a daughter.
Pennant-Rea.—On Jan. 29, at Salisbury, Rhodesia, to Pauline (*née* Creasy), wife of Flg. Off. Pennant-Rea, R.A.F.—a daughter.
Stockdale.—On Jan. 28, at Maidenhead, to Nina Mary (*née* Elliott), wife of Sqdn. Ldr. G. Stockdale—a son.
Sumner.—On Feb. 1, at Uppingham, Rutland, to Noel (*née* Brandon), wife of Flg. Off. R. A. C. Sumner, R.A.F.V.R.—a daughter.
Waddington.—On Jan. 30, at Fulmer, to Pamela (*née* Churchman), wife of Act. Sqdn. Ldr. M. W. Waddington, R.A.F. (reported missing Aug., 1941)—a son.
Wiseman.—On Jan. 28, at Chippenham, to Doreen, wife of Flt. Lt. E. W. Wiseman—a son.

FORTHCOMING MARRIAGES

O'Dowd—Bingham.—The engagement is announced between Flg. Off. Bernard O'Dowd, son of Dr. and Mrs. O'Dowd, of Edgbaston, Birmingham, and Beryl, daughter of Mr. and Mrs. Bingham, of Redbourn, and Blackheath, S.E.3.
Moore—Hodges.—The engagement is announced between K. B. Moore, F.A.A., son of Mr. and Mrs. Joseph Moore, Kingston Hill, Surrey, and Marjorie Elizabeth, daughter of the late A. M. Hodges and Mrs. Hodges, of Fitzgeorge Avenue, W.14, and Penylan, Cardiff.
Palmer—Rich.—The engagement is announced between Dudley Palmer, elder son of the late Charles Palmer and Mrs. Palmer, of London, and S/O Nancy Rich, W.A.A.F., youngest daughter of Mr. and Mrs. G. S. T. Rich, of Sheffield.
Phillips—Lockyer.—The engagement is announced between Flt. Lt. A. M. K. Phillips, R.A.F., eldest son of Lt. Col. and Mrs. A. A. Phillips, of Lahore, India, and of Cumberland, and Janet Kathleen Lockyer, youngest daughter of Capt. E. L. B. Lockyer, D.S.O., R.N., and Mrs. Lockyer, of Radworthy, N. Devon, and of Fleetwood, Lancashire.

MARRIAGES

Barritt—Junker-Anderson.—On Jan. 31, at Broadway, Worcs., Sqdn. Ldr. Clifton Barritt to Tove Junker-Anderson, of Copenhagen.
Chappell—Boering.—On Jan. 31, at Chingford, Sgt. Martin Chappell (Hon. Artillery Co.), of London and Woodford Green, to Flt. Sgt. Mary Boering, W.A.A.F., daughter of Mr. and Mrs. M. C. Boering, of Chingford, Essex.
Clifford—Deverell.—On Feb. 4, at Warlingham, Surrey, Flg. Off. P. S. Clifford R.A.F.V.R., to Joan Deverell, of Blockley, Glos.
Collins—Purves.—On Jan 26, at Kenton, Plt. Off. W. A. A. Collins, of Sutton, to Beryl May Purves, of Kenton.
Coulson—Webber.—On Jan. 23, in Washington, D.C., Flt. Lt. S. P. Coulson, R.A.F., younger son of Dr. and Mrs. Coulson, of Wincanton, to Phyllis Mary, elder daughter of Mrs. Webber, of Emsworth, Hants.
Cunliffe—Barber.—On Jan. 28, at Kendal, Plt. Off. C. J. Cunliffe, second son of the late Dr. E. N. Cunliffe, of Manchester, and of Mrs. Cunliffe, of Windermere, to Margaret Hamer Barber, V.A.D., only child of Mr. and Mrs. J. A. Barber, of Elmhurst, Kendal.
Craven—Claudius.—In January, in the Middle East, Wng. Cmdr. D. M. H. Craven, R.A.F., son of Mr. and Mrs. H. H. Craven, of Pocklington, Yorkshire, to Dorothy G. Claudius, daughter of his Excellency the late S. Claudius Pasha and the late Mrs. Claudius, of Alexandria, Egypt.
Devonshire—Lister.—On Jan. 29, at Leytonstone, T/Capt. J. W. Devonshire, King's Own, elder son of the late J. W. Devonshire, of Woodford, and Mrs. Devonshire, to S/O Betty Lister, W.A.A.F., elder daughter of Mr. and Mrs. Leslie Lister, of Bude, Cornwall.
Green—Beale.—On Feb. 10, at Minchinhampton, Flt. Lt. G. E. P. Green, D.F.C., R.A.F., to Miss M. C. (Peggie) Beale.
Hamilton—Custance.—On Jan. 26, at Weymouth, Plt. Off. William Hamilton, R.A.F.V.R., elder son of the late William Hamilton, M.C., M.B., Ch.B., of Loanhead, Midlothian, and of Mrs. Hamilton, of Perthshire, to Rosemary, daughter of the late Rear-Admiral W. N. Custance, C.B., and of Mrs. Custance, of Weymouth.
Hill—Warrilow.—On Jan. 23, at Kirkwall, Orkney, Lt. (A) A. L. Hill, R.N.V.R., to N. K. Warrilow, W.R.N.S.
Rose—Newman.—On Jan. 28, at Harlington Parish Church, Flt. Lt. W. L. Rose, R.A.F., to Margaret Florence Newman, only daughter of Mr. and Mrs. J. B. Newman.
Stafford—Erskine.—On Dec. 24, at Winchester, Plt. Off. Bernard Stafford, R.A.F.V.R., of Chandlers Ford, Hants, to Edris Erskine, of Alverstoke.
Stanger—Dale.—On Nov. 29, at Cairo, G. B. Stanger, son of Mr. and Mrs. R. H. H. Stanger, of Speldhurst, Kent, to Alice S. Dale, daughter of Plt. Off. and Mrs. A. B. Dale, of Cairo.
Thomson—Stewart.—On Jan. 31, in London, Capt. Colin Thomson, R.A.M.C., son of Mr. and Mrs. G. E. D. Thomson, of Bury St. Edmunds, to Flg. Off. Lesley Isabel Stewart, M.B., R.A.F., daughter of Sir Findlater Stewart, of London.

CORRESPONDENCE

"Ferry Pilot"

YOUR NOTICE of "Ferry Pilot," in the issue of Jan. 23, was most encouraging. However, I would like to rectify any false impressions which may have been created by the statements concerning the lack of facilities granted to us, for they exclude all mention of the invaluable help and kindness we received from everybody in A.T.A.

The bulk of the shooting was done when A.T.A. was considerably understaffed and at its busiest. This, and the fact that more and more aeroplanes had to be delivered to carry out the rapid expansion of the Air Force, placed a great strain on the pilots. To invade a busy aerodrome at such a time with all the paraphernalia necessary for film production and expect hard-pressed pilots and ground crews to start film-making was asking a great deal.

On several occasions the cast worked till two and three in the morning to make up for the inevitable delays and difficulties that occurred, and it was never too much trouble for them to work on the script after a hard day's flying. An Anson was always available as camera aeroplane, and other aeroplanes supplied whenever possible.

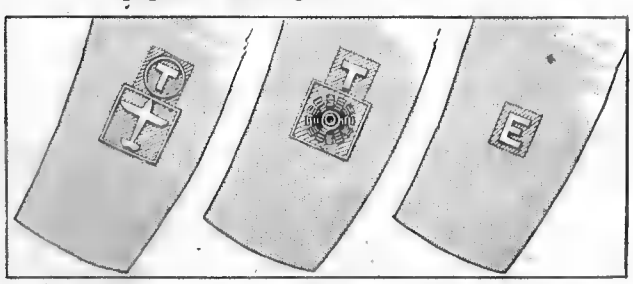
I hope you will give me this chance of making a final grateful acknowledgment to all those in A.T.A., without whose help and patience the film would never have been made.

PAT JACKSON.

[We made no suggestion that A.T.A. had failed to give all the help it could to the maker of "Ferry Pilot." Our criticism was directed to those authorities which could withhold or make available the various types of aeroplanes delivered by A.T.A. We understand that Mr. Pat Jackson was welcomed in the mess of the ferry pool where most of the film was made and that he lived for some weeks "on the job." We understand, too, that he had to take his cameras a long way to photograph the Whitley. The Wellington was not made available to him. The German aeroplanes were flown for his benefit only after months of negotiation. Of course, the director had to cut his coat according to his cloth. We still feel that the ration of cloth was unnecessarily meagre.—ED.]

Trade Badges

RE BADGES: there are so many trades in the R.A.F. now that it would seem to be a case of "all or none," and I would suggest a division of trades into, say, Technical, Administrative, Equipment, Messing, and so on.



The initial letter of these divisions could be worn on the lower sleeve, i.e., "T," "A," "E," "M," and then, if desirable, a small badge to note the subdivision of the trade, i.e., for fitters a "T," and underneath a Radial engine; for Riggers a "T" and the plan view of an aeroplane. Something like this would be of help in the Service, as one could see more or less at a glance what trade a man was by his badge. ACH/GDs could have "G.D.," and I would suggest that all instructors should have some distinction—say, a ring round the initial letter.

LEXICON.

The Reduction of Veterans

THE MAJORITY of ex-officers of the last War come within the new 41-50 age groups liable for military service, yet it would seem, from a reply given in the House of Commons, that such officers will be expected to serve in the rank of Private in this War, or, since commissions in the R.A.F.V.R. are no longer available, that Pilot-officers of the last War will be enrolled as A.C.2s.

Many R.F.C. pilots may thus soon find themselves under the command of schoolgirl-complexioned youths who have managed to secure commissions in the Administrative branch and so to escape anything like a real soldier's training or, apparently, the risks of actual flying.

Probably, hundreds of ex-pilots are beginning to wonder if it would be better to apply for Army and not R.A.F. service in order to avoid a really Gilbertian future.

There must be many members of the R.F.C. (a part of the Army, indeed!) whose experience, particularly of "Contact Patrol" and "Artillery Observation" would be invaluable to an Army Co-operation unit to-day. Psychologically, this is undoubtedly the time for the Army Air Arm to step in and capture talent by offering commissions to ex-pilots. The enthusiasm of some of them (who are now to be cold-shouldered by the R.A.F.) would be tremendous.

ART. OBS.

The Air Crew Volunteers

AS WE, potential W/Op A/G's, have been awaiting an air gunnery course for the past 18 months, we would like to draw your attention to the fact that Air Gunners and W/Op A/G's have been waiting phenomenally long periods for a course while the country is crying out for volunteers for air crew.

This situation is becoming drastic as a larger number of W/Op A/G's, U/T, are being posted as ground W/Ops, many of them having been transferred from pilots to W/Op A/G's a year and a half ago to meet the shortage of air gunners which then existed.

As air crew is entirely voluntary, it is logical that the supply is limited and such a scandalous waste of volunteers, who are really keen, is definitely not the way to win the War.

25 "BROWNED OFF" U/T W/Op A/G's.

[The idea that the supply is limited is clearly not borne out by the facts as stated in this letter. Volunteering for air crew duties has become chronic among the young men who give their devotion to the R.A.F. There is, of course, some limitation of supply in consequence of the high standards required in air crews and such as are chosen should not be made sick by having their hope too long deferred. A wait of 18 months is much too long. At all events, such patience should not be rewarded now by remustering as ground gunners.—ED.]

The Racing Comets

YOUR PIECE about the MacRobertson Race in THE AEROPLANE of Jan. 23 says that the firm of Clouston-Ricketts flew the Mollisons' Comet. That particular aeroplane, I think, was renamed "Salazar" and was broken by the Portuguese. The one used by the Clouston-Ricketts crew was Scott's race winner.

V.R.

Aircraft, Old and New

LIKE your correspondent, Mr. R. H. Sanders, in THE AEROPLANE of Dec. 26, I also am endeavouring to get together a kind of "super-Jane," with photographs and data of as many different types of aircraft as possible. I have been on the job now for three years, and, with the help of THE AEROPLANE and similar books, have made quite good progress.

I find, however, that, whilst I have a quite representative collection of new and recent types, I have a definite shortage of earlier aeroplanes. Therefore, I thought it possible that I might acquire, through the help of your readers, copies of your journal prior to 1938. Any issued before that year would be very welcome.

The "German Aircraft in Service" series has proved very valuable. Can we have "Italian and America Aircraft in Service" when the present series is finished, please? I am sure they would be popular.

JOHN W. R. TAYLOR.

[The series of "German Aircraft in Service" is now approaching completion. We intend to follow it with a similar series on Italian aircraft, although, because of the smaller interest in these types to-day, each page will contain a larger number of types. After that we hope to deal with American types in the same manner as the German.—ED.]

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Yours sincerely,

John Mannering

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For sale, four copies of Jane's All the World Aircraft for 1938 and 1940. S. C. Greenwood, Constables, Uppingham, Rutland. 603-5

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